



SLI STEM Summer Internships

Summer 2021

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Funding for student stipends for internships provided by FHDA Foundation and the Science Learning Institute at Foothill College.

For questions about the SLI STEM Summer Internship program, please contact SLI Director, Sophia Kim at kimsophia@fhda.edu.

Development Intern at Bulletproof

Megan Andrews

Summer 2021



ABOUT YOU:

- Hometown: Los Altos Hills, CA
- Major/ certificate: Computer Science
- Transfer institution: Simon Fraser University
- Year of graduation from Foothill College: 2021

PLACEMENT:

Name of company/ institution: Bulletproof

Website: <https://www.bulletproof.com/>

Mission (if a company):

“At Bulletproof, we believe that the right nutrients can help you tap into your potential and feel your best every day. We create products that fuel your path to greatness.”

Supervisor: Rachel Nigh

OBJECTIVE:

The goal of this internship was to find ways to improve and optimize the Bulletproof website.

METHODS:

Some of the methods used include a UX/UI (User Experience/Interface) research project which involved competitive analysis, user session recordings via Hotjar and reading up on articles for UX/UI best practices. The research evolved into a presentation where interns made suggestions on how to improve the Bulletproof website. Another task was to audit the various webpages. The Bulletproof products can be modified or removed from stock altogether, therefore edits must be made to the Bulletproof blog posts to keep them up to date. The edits made included editing the text, links and HTML of the webpages.

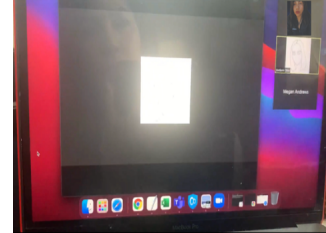
RESULTS & DISCUSSION:

I played a role in keeping the Bulletproof website up to date for the convenience of the Bulletproof customers and website users. My research might be used to make the website more engaging and bring Bulletproof potential customers closer to checking out and buying their products.

ACKNOWLEDGEMENTS:

Special thanks to my mentors Jordynn Otto, Alexa Trefry, Joshua Cameron and thanks to Chaz Bantle and my supervisor Rachel Nigh. Thanks to Bulletproof and Sophia Kim with the Science Learning Institute at Foothill College for providing me with this opportunity.

Bulletproof
Ana Bravo
Summer 2021



ABOUT YOU:

- Hometown: Redwood City
- Major/ certificate: Computer Science
- Year of graduation from Foothill College: June 2022

PLACEMENT:

Name of company/ institution: Bulletproof

Website: <https://shop.bulletproof.com>

Mission (if a company): Bulletproof believes that the right nutrients can help you tap into your potential and feel your best every day. They create products that fuel your path to greatness.

Supervisor: Rachel Nigh

OBJECTIVE:

The goal of this internship was to learn about the different jobs at a tech company, get experience working at a tech company, and learn from experienced engineers.

METHODS:

We had a couple of projects throughout the internship. The methods I followed in order to complete the internship was to attend all meetings to get instructions for projects and ask questions. We used Zoom chat as a method to ask questions. We also used a software, Jira to stay organized and stay on task.

RESULTS & DISCUSSION:

I was able to experience and learn from others. I learned about the company and the tools/software that they use. I was able to learn and feel more comfortable when communicating with others, presenting in front of the team, and collaborating with others in a remote setting. It's interesting to learn how the company comes up with a new idea/product. It goes through many steps and testing before going on store shelves. I learned about other interesting job opportunities available at tech companies.

ACKNOWLEDGEMENTS:

Josh Cameron, Developer

Jordynn Otto, Developer

Rachel Nigh, Senior Director, Human Resources

Alexa Trefry, UI/UX Designer

Chaz Bantle, Senior Recruiter

Bulletproof Web Development

Akshar Patel

Summer 2021



ABOUT YOU:

- Hometown: Sunnyvale
- Major/ certificate: Computer Science
- Transfer institution: UC Davis
- Year of graduation from Foothill College: 2021

PLACEMENT:

Name of company/ institution: Bulletproof

Website: bulletproof.com

Mission (if a company): At Bulletproof, we believe that the right nutrients can help you tap into your potential and feel your best every day. We create products that fuel your path to greatness.

Supervisor: Alexa Treffy

OBJECTIVE:

The objective of the internship was to create and innovate ideas on how Bulletproofs website can thrive in the sense of user web experience. Along with that, use languages such as HTML/CSS to create parts of the website.

METHODS:

For the projects that I did the process was as such. For the auditing and bug fixing I did, I was usually given an excel spreadsheet with everything that needed to be fixed. I would use that sheet to fix what I needed to and update that sheet as so, so the whole team is up to date. For the creation using languages such as HTML/CSS, I would use Visual Studio Code and development prototypes on there. I would send the code to my supervisor to look over and give feedback. If it was done well, then I would be given a new project and the process repeats.

RESULTS & DISCUSSION:

The results of the project were a lot of self-growth and creation. The bug-fixing/auditing part of things took a while but I was able to help the team solve over 100 broken links that needed to be fixed. My favorite part of the internship was my ability to create the blog infographics. I was able to create 3 different infographics using code. Although I knew these languages beforehand, this was a good experience of advancing my skills in those languages. I was able to learn about tables/graphs which I had not known about before. I think this was a really good time to learn discipline and persistence because when I got stuck, I had to push myself to keep going. Overall, this was an awesome experience for me.

ACKNOWLEDGEMENTS:

Jordyn Otto – Development Lead

Polymer Chemistry Research at San Jose State University

Arleen Cao

Summer 2021

ABOUT YOU:

- Hometown: *Cupertino, CA*
- Major: *Environmental Toxicology*
- Transfer Institution: *UC Davis*
- Year of graduation from Foothill College: *Summer 2021*



PLACEMENT:

Company / Institution: *San Jose State University*

Website: <https://www.sjsu.edu/chemistry/People/Faculty/Dirlam/index.html>

Supervisor: *Dr. Melody Esfandiari*

OBJECTIVE:

To devise an environmentally-green method of developing an iodostyrene based polymer coating for use in electrochemical batteries.

METHODS:

- Basic organic chemistry techniques: extraction, vacuum filtration, dehydration, TLC, precipitation
- Advanced techniques: **ATRP** (atom transfer radical polymerization) via Schlenk Line to have oxygen free conditions for polymerization; **Dry Vacuum Column Chromatography** for quick purification; **Super Vacuum** via Schlenk Line to remove remaining solvent
- **NMR** data collection and interpretation to verify identity of compound
- **SEC** data collection and interpretation to determine compound's molar mass

RESULTS & DISCUSSION:

We developed a new method of synthesizing iodostyrene monomer. We then successfully made the iodostyrene based block polymers with our iodostyrene monomers and the ATRP technique. ATRP produced a more uniform poly(iodostyrene) than Free Radical Polymerization.

ACKNOWLEDGEMENTS:

- **Dr. Melody Esfandiari**; Foothill to SJSU Internship Coordinator, Lecturer at SJSU and Chemistry Instructor at Foothill College
- **Dr. Philip T. Dirlam**; Project Lead at Dirlam Lab and Assistant Professor at SJSU
- **Kym Ngo**; Research Assistant at SJSU
- **Jorge Silva**; Research Assistant at SJSU

SJSU Chemistry
Shenyue Huang
Summer 2021

ABOUT YOU:

- Hometown: Zhongshan, China
- Major/ certificate: Chemical Engineering
- Transfer institution: UC Berkeley
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company/ institution: San Jose State University
Website: <https://www.sjsu.edu/>
Mission (if a company):
Supervisor: Philip Dirlam, Melody Esfandiari

OBJECTIVE:

My objective was to experience what research is like and strengthen my organic chemistry lab skills.

METHODS:

To make polyiodostyrene, iodostyrene (building blocks of polyiodostyrene) had to be synthesized first. After iodostyrene was made, a method called Atom Transfer Radical Polymerization was used to synthesize polymer. Finally, to ensure the desired product was made, NMR and Size Exclusion Chromatography were utilized to characterize the product. This whole process involved a series of reactions and lab techniques, such as, reduction, dehydration, extraction, and filtration, etc.

RESULTS & DISCUSSION:

During this internship, we have successfully made polyiodostyrene via ATRP. The polyiodostyrene. This polymer supports hypervalent iodine and can be applied to electro batteries.

ACKNOWLEDGEMENTS:

Melody Esfandiari, SJSU.
Philip Dirlam, SJSU.

Polymer Research
Andrea Mogannam
Summer 2021



ABOUT YOU:

- Hometown: San Jose, CA
- Major/ certificate: Biological Sciences
- Transfer institution: UC Davis
- Year of graduation from Foothill College: 2021

PLACEMENT:

Name of company/ institution: San Jose State University

Website: <https://www.sjsu.edu/chemistry/>

Supervisor: Philip Dirlam

OBJECTIVE:

The objective of this project was to figure out how to make polymers in a sustainable way with a focus on green chemistry methods. We are looking to achieve a new monomer source that will be able to be used in polymerization.

METHODS:

The first step of our project was to read and try to interpret previous research that was done in this particular field of chemistry. Once we had the background we would discuss with Phil how to actually scale the reaction. We would make some calculations to figure out quantities of the reagents we needed and we would gather all of our materials. We utilized the various techniques of purification, extraction, precipitation, and how to gather NMR and SEC data. One of the most vital techniques is called ATRP with a Schlenk Line. This is how we actually make the polymers because they run under zero oxygen and zero water conditions.

RESULTS & DISCUSSION:

The results of our experiment was that we were able to successfully make polymer using the monomer iodostyrene which we did synthesize in the lab. We figured out a new process to actually make iodostyrene which involves a reduction using sodium borohydride and then a dehydration following that to yield us our final product. We also carried out a new technique with our monomer synthesis which is called Dry Column Vacuum Chromatography (DCVC) which could be published. The greater implication for this research is that we are able to make polymers in a sustainable way which will be more environmentally friendly and produce less waste.

ACKNOWLEDGEMENTS:

I would like to thank Dr. Dirlam from SJSU as well as Dr. Esfandiari who was the coordinator between Foothill and SJSU.

Birdeye Front End Developer

Mokhalad Aljuboori

Summer 2021



ABOUT YOU:

- Hometown: Sunnyvale California
- Major/ certificate: Computer Science
- Year of graduation from Foothill College: Fall 2022

PLACEMENT:

Name of company: Birdeye

Website: <https://birdeye.com/>

Mission: Birdeye helps businesses grow through happy customers. Birdeye is a marketing platform that businesses use to attract customers.

Supervisor: Kailash Yadav - Senior Engineering Manager

OBJECTIVE:

Our main goal is to create a replica of Birdeye website

METHODS:

I was tasked with working on the front end of the website while Alani and David worked on the backend. Having no experience in web development, I spent the first two weeks of the internship studying HTML CSS and JavaScript by taking courses on Udemy. After getting familiar with the web development technologies, I began working on creating a replica of the home page. I was learning as I code, if I faced a problem I would watch “How To” YouTube videos as well as use Stack Overflow to get my questions answered.

RESULTS & DISCUSSION:

While our work had no direct implications on the company, it was a great learning experience for me. I learned the basics of creating a website and now equipped to create my own. I learned how to use HTML and CSS and realized the power that these technologies hold. I also learned how to work as a team virtually by using GitHub and learned the importance of communication.

ACKNOWLEDGEMENTS:

Prachi Tripathi - Senior Manager

Sumit Jain - Country Head & Head of Engineering

Birdeye
David Chernyak
Summer 2021

ABOUT YOU:

- Hometown: Sunnyvale
- Major/ certificate: Computer Science
- Transfer institution: San Francisco State University
- Year of graduation from Foothill College: 2021

PLACEMENT:

Name of company/ institution: Birdeye

Website: birdeye.com

Mission: Collect reviews, convert leads, run surveys,
get referrals - all with messaging.

Supervisor: Kailash Yadav

OBJECTIVE:

To grow and develop new web and software development skills. Gain a deeper understanding of both front-end and back-end development and create a replica of the Birdeye website.

METHODS:

I first started out with a CMS called Strapi to create, upload, and store content for web pages. I then worked on creating a form that could collect data and then store it on a MYSQL database. Finally, I worked on displaying that data using Javascript and pairing it with HTML code.

RESULTS & DISCUSSION:

The result of my work was a fully functioning database that could upload to local web pages. I created a Javascript application using features like Node.js to achieve this.

ACKNOWLEDGEMENTS:

Kailash Yadav - Supervisor/Mentor

Sophia Kim - SLI Director

Steve Silva

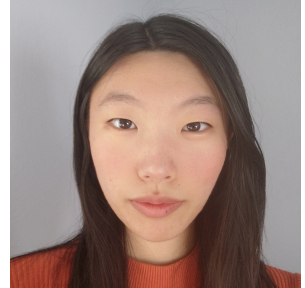
Birdeye Intern

Alana Li

Summer 2021

ABOUT YOU:

- Hometown: Kingston, RI
- Major/ certificate: Computer Science and Physics Associates degrees for Transfer
- Transfer institution: UC Berkeley
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company/ institution: Birdeye

Website: <https://birdeye.com/>

Mission (if a company): Birdeye helps businesses grow through happy customers.

Supervisor: Kailash Yadav

OBJECTIVE:

- Create a replica of the Birdeye website using HTML, CSS, Javascript
- Use databases to organize blog posts

METHODS:

At first, me and David were introduced to Strapi to organize the blog post data. However, we then switched to building our own CMS database using SQL and PHP. Mo worked on writing up the HTML and CSS for the website.

RESULTS & DISCUSSION:

Created working database for collecting blog post data such as title, author, length, etc. Final website looks very similar to Birdeye website, just not with links implemented. However, this wasn't actually implemented by Birdeye as they already have a working website.

ACKNOWLEDGEMENTS:

Kailash Yadav – Supervisor

Sophia Kim – Organizer

Prachi Tripathi – Birdeye HR

Mokhalad Aljuboori – Fellow Intern

David Chernyak – Fellow Intern

SLI Team – Provided this amazing opportunity

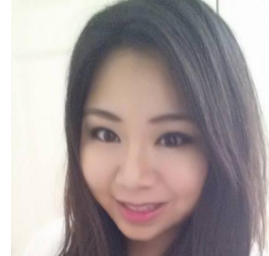
Software Engineer Internship

Stephanie Lynn Pancho

Summer 2021

ABOUT YOU:

- Hometown: Mountain View, CA
- Major/ certificate: Computer Science
- Transfer institution: N/A
- Year of graduation from Foothill College: Fall 2021



PLACEMENT:

Name of company/ institution: Birdeye

Website: <https://birdeye.com/>

Mission (if a company): “Our mission is to help businesses grow through happy customers.”

Supervisor: Manvi Mehta & Mahak Aslam

OBJECTIVE:

The goal of the internship was to learn new technological skills such as software applications and programming locations, and to learn project related skills such as research, organization, and teamwork.

METHODS:

In the beginning of the internship, I created a project overview that outlined the goals and objectives, the steps and individual tasks to achieve the goals, and online resources the team can reference. Then we set up a timeline and assigned tasks using the Jira project management tool. We researched what would be the best programming tools for our project and decided on HTML, CSS, Javascript for the client side and ExpressJS, NodeJS, and Puppeteer for the server and backend side.

RESULTS & DISCUSSION:

The final internship project consists of building a software tool and web application that aggregates review data from review websites to download as a JSON file and allow the data to populate a table in the web browser. I worked with another intern, Alice Wang, and we were successful in implementing the project. The use of this software tool allows business clients to view all their reviews across the web in one platform and be able to understand customers' views on their business' goods and services.

ACKNOWLEDGEMENTS:

Manvi Mehta - Lead Backend Engineer at Birdeye

Mahak Aslam - Engineering Manager at Birdeye

Birdeye Internship

Alice Wang

Summer'21 Freshman

ABOUT YOU:

- Hometown: San Jose, CA
- Major/ certificate: Computer Science
- Transfer institution: UCLA
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company/ institution: Birdeye

Website: <https://birdeye.com/>

Mission (if a company):

Supervisor: Mahak Aslam

OBJECTIVE:

Create a chrome extension to aggregate reviews, put it into a file, and download that file to the local system.

METHODS:

- Chrome plugin base to allow for incorporation of puppeteer API Implement popup.html to display download button with Birdeye logo
- Implement popup.js to add event listeners for when the user clicks the button
- Write JavaScript code using puppeteer to scrape the following data from [capterra.com](https://www.capterra.com)
- Set up server.js Use express for routing
- Create middleware functions to connect frontend and backend

RESULTS & DISCUSSION:

Integrated puppeteer with Chrome so that when the button is clicked the event listener is activated, the JavaScript code that uses puppeteer to scrape data is run

ACKNOWLEDGEMENTS:

Name of person, their affiliation

Supervisors: Mahak Aslam, Manvi Mehta

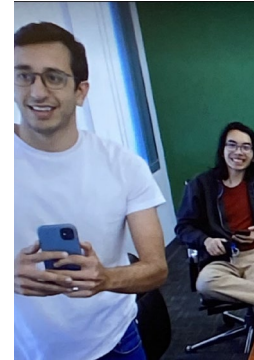
Stephanie Pancho - Project Lead

Alice Wang - Project Member

Test Engineer Intern @ Esperanto Technologies

Amirali Marashifar

S2021



ABOUT YOU:

- Hometown: Tehran, Iran
- Major/ certificate: Computer Science
- Transfer institution: SJSU
- Year of graduation from Foothill College: 2021

PLACEMENT:

Name of company/ institution: Esperanto Technologies

Website: <https://www.esperanto.ai/>

Mission (if a company): Create energy efficient RISC-V microchips

Supervisor: Bill Orner

OBJECTIVE:

My goal of this Internship was to learn more about the semiconductor industry and to try to understand the process of creating such important objects that affect our daily lives. Some would even call these microchips the new oil!

METHODS:

The first steps in my process of completing the projects was confusion. I did not know much about what to do, however, I learned that the most important aspect is to start from somewhere. There was a fantastic company wiki page as well as Google at my doorstep. I would try to google the skills necessary, watch a couple of videos on Youtube or I would extensively read the Esperanto's Wiki page trying to understand what I was facing.

RESULTS & DISCUSSION:

The main process of my job was to set up the system level testing labs in the office at Mountain View. We created Linux servers as well as windows servers which people could remotely access. Furthermore, I learned and applied many different Linux commands and I will use those commands for the rest of my professional career. I think the most rewarding part about this experience was the conversations I had with different individuals at the company. Looking back at the conversations we had, I learned a lot about networking, taking different career paths, and about the semiconductor industry. Furthermore, the most challenging part of this internship was understanding Linux and working on the same project with different senior engineers. There were times when two senior engineers had different ideas on how to approach the same project. And Aaron (my fellow intern) and I did not know which engineer to listen to and which approach to take. However, we jumped through that hurdle by trying to talk to the senior engineers at the same time and tried to fix the problem.

I will use the skills I have acquired at Esperanto for the rest of my life. I have built a foundation for Linux at Esperanto which I continue to use and build upon on a daily basis. Furthermore, I understood the importance of microchips in our society. I actively listen to news regarding the microchip shortage at the time. And I will care about the situation of microchips for the rest of my life.

ACKNOWLEDGEMENTS:

I would like to thank many people for my internship, including Bill Orner, Devin Patel, Leo Xia, Daisy Chen, Min Woo, Sue Depositar, Aaron Vuong, Jin Kim, and Darren Jones, Art Swift and the SLI people Sophia and Steve.

Esperanto Internship

Aaron Vuong

Summer 2021

ABOUT YOU:

- Hometown: San Jose
- Major/Certificate: Computer Science for Transfer, A.S
- Transfer institution: University of California, Santa Cruz
- Year of graduation from Foothill College: 2022



PLACEMENT:

- Company: Esperanto
- Website: <https://www.esperanto.ai/>
- Mission: For hardware and system designers who need the most energy-efficient, high-performance computing solutions for artificial intelligence and machine learning applications, Esperanto Technologies delivers SoCs based on the RISC-V open instruction set architecture (ISA).
- Supervisor: Bill Orner

OBJECTIVE:

The goal of this internship was to experience a professional working environment, develop workplace communication skills, and learn about the semiconductor industry.

METHODS:

The steps that I followed in this internship were being given a set of instructions, figuring out what they mean, figuring out what to do based on that, then acting on all of the information above. I consistently utilized this process to complete tasks and asked for clarification and help when needed. This ranged from setting up equipment and hardware to installing software.

RESULTS & DISCUSSION:

The result of this project was having a fully set up bring-up station to host and run tests in accordance with the chips and the bring-up boards. The implications of this work is that it allows the company to test their first real silicon. The company is able to test their actual product instead of just simulations and probe it for higher-level deficiencies or be able to run tests on it remotely if needed.

ACKNOWLEDGEMENTS:

I appreciate all of the efforts that the entire Manufacturing Operations team made to help us settle in at Esperanto and grow in a professional environment.

UCSC Psychology internship
Cecily Felicich
Summer 2021



1.
 - a. Hometown: San Jose
 - b. Major: Psychology major associate for transfer graduated
 - c. Transfer institution: San Jose State University
 - d. Graduated: 2021
2. Placement
 - a. UCSC Psychology
 - b. <https://psychology.ucsc.edu/>
 - c. Sam Hughes
3. Objective of the internship: To help Sam Hughes in his research of erotic hypnosis, we transcribed interviews and then coded other interviews to help pick out useful data for the bigger research project. We hoped to learn and retrieve important information from the interviews for the research project.
4. Methods and processes that I relied on during the internship were training received in ethics in the city training in how to handle and work with sensitive information, in transcriptions it was very patience based as it was a tedious part of the work, then with the coding it was a lot of critical thinking skills to analyze the data then to pick out what seemed relevant to the bigger project, This needed prior knowledge of psychology concepts and familiarity with term sussed in the kink world.
5. The project is not finished as its building towards a research paper, but my contribution is finished with the finished transcription and coding.
6. Thank you so much for Sophia, Steve, Miloni, Sam and the donors for making this internship what it was and allowing me to participate!

Psychology at UCSC

Alison Murchek

Summer 2021



ABOUT YOU:

- Hometown: Mountain View, CA
- Major: Psychology
- Transfer Institution: Undecided
- Year of Graduation from Foothill: 2021

PLACEMENT:

- Name of institution: University of California, Santa Cruz
- Website: N/A
- Supervisor: Sam Hughes

OBJECTIVE:

The goal of this internship is to better understand the lives and experiences of people with an interest in erotic hypnosis.

METHODS:

In this internship, we were to listen to audio recordings of interviews and transcribe them. Then, later on we were to code them in a qualitative manner. This entails reading through what was said by participants and deciding what category or categories that statement would fit into.

RESULTS AND DISCUSSION:

The overall result of this project once it is completed will be a paper that is the second of its kind. This paper will give insight into the erotic hypnosis community. This may include the ages, genders, sexualities, and any other identities/demographic information belonging to participants and how these affect their experiences in the context of erotic hypnosis. Also, there may be discussion of how these people carry out their erotic hypnosis interests, how they first found out about the community, any problems or challenges both they and the community as a whole may face, how they view consent in the context of erotic hypnosis, aspects of the community they would like to see changed, and how these changes can be made. Implications of this work include a heightened awareness of this community and a more compassionate view of its members.

ACKNOWLEDGMENTS:

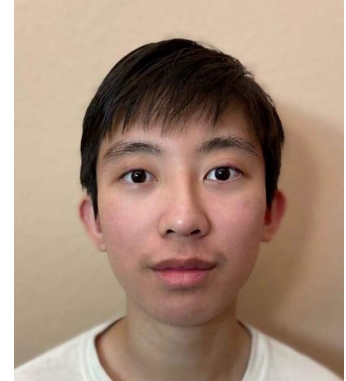
Nick Santer

The Psychology of Erotic Hypnotists

Long Tran
Summer 2001

ABOUT YOU:

- Hometown: Ho Chi Minh City, Vietnam
- Major/ certificate: Sociology Associate's degree, Psychology Associate's degree, History Associate's degree
- Transfer institution: San Jose State University
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company/ institution: UCS Santa Clara
Website: <https://www.scu.edu/>
Supervisor: Sam Hughes

OBJECTIVE:

To dive a bit into the BDSM world and understand the people within that world.

METHODS:

Before we begin listening to interviews with people who are into BDSM, we had to get comfortable first by watching BDSM-related content as assigned by our supervisor. Then we listened to the interview and transcribed them, meaning we typed out the interview from the audio file word-for-word. Then we would code them by classifying certain sentences into particular categories.

RESULTS & DISCUSSION:

I was able to finish one transcription and coded two of the completed transcribed interviews that we had. Our supervisor still has a lot more to work on, but we helped him substantially with transcribing and coding. We also brainstormed new codes after our coding section, hoping to learn more about people who are into erotic hypnosis. All this helps the bigger project that would allow everyone to understand more about erotic hypnosis, a rather controversial sexual practice that has its own niche community.

ACKNOWLEDGEMENTS:

Sam Hughes, supervisor
Kirsi Engel, my boss at Foothill Library

Stem-Away
Bayel Asylbekov
Summer 2021

ABOUT YOU:

- Hometown: Bishkek, Kyrgyzstan
- Major/ certificate: Computer Science
- Year of graduation from Foothill College: 2022



PLACEMENT:

Name of company/ institution: Stem-Away

Website: <https://stemaway.com>

Mission (if a company): To provide internship experience to students

Supervisor: Debaleena Das

OBJECTIVE:

To purpose of this internship is to give students experience working together on a project. The project was to create a machine learning model that would recommend tags for a text.

METHODS:

The whole internship is split into 4 modules, each 1-2 weeks long. In each module there is a description of what you are expected to do. They provide you with all the required recourses to finish that module. Each week I would also meet with my teammates to update each other on our progress.

RESULTS & DISCUSSION:

As a result, we as a team created a web-application that used machine learning module that we trained. The program takes a text and outputs several tags that can be used to describe what's in the text. Since this organizations goal is not to make a commercial product, the purpose of our project was to teach us how to work on a big project as a team.

ACKNOWLEDGEMENTS:

My team lead Mandy Zhang has helped me a lot.

STEM-Away: Virtual Full-Stack Internship

Jonathan Hung

Summer 2021

ABOUT YOU:

- Hometown: Valencia, Venezuela
- Major/ certificate: Computer Science
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company/ institution: STEM-Away

Website: <https://stemaway.com/>

Supervisor: Keegan George

OBJECTIVE:

Learn about full-stack development, work with a platform called Discourse and work in a final project related to this platform.

METHODS:

The working process of the internship was about completing/studying weekly modules and attending kick-off meetings with my mentor for clarifications and explanations of the material in the respective modules. These modules had the intention of preparing me for the final project which, in my case, was adding a new functionality to Discourse. Also, every week I had a meeting with the team that worked with me in the final project, to talk about the content of the modules and exchange different ideas about the project. All these methods were part of the process to work in the final project.

RESULTS & DISCUSSION:

The results from the weeks of the internship was a gallery plugin, which I worked with my team, to add a functionality to the Discourse platform. For this project, I was part of the backend team, and we needed to work in coordination with each other (including people from the frontend team) to create a single product. Although I think my work didn't have a big impact in STEM-Away, my work had some importance within the team, since we worked in implementing what the frontend team had designed for the product, and we worked in the plugin for it to actually be accessible to the user.

ACKNOWLEDGEMENTS:

Debaleena Das, founder of STEM-Away

StemAway - Machine Learning Pathway

Maria Mihaila

Summer 2021

ABOUT YOU:

- Hometown: Mountain View, CA
- Major/ certificate: Computer Science B.S (in progress), Psychology AA (completed)
- Transfer institution: UC Davis
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company/ institution: StemAway

Website: <https://stemaway.com/home>

Mission (if a company): "STEM-Away® is the premiere career hub for students interested in the STEM industries. We have career tools that nurture STEM talent beyond traditional demographics and schools, our goal is to eliminate opportunity barriers in STEM."

Supervisor: Debaleena Das

OBJECTIVE:

The goal of the internship was to develop a recommendation and classification system for an online Arts&Craft forum using natural language processing.

METHODS:

To begin, my team and I built a web scraper to compile over 10,000 posts from an Arts & Crafts forum and metrics from 15 different categories. Then, in the exploratory data analysis stage, we did some data visualization. Once acquainted with the data, we moved on to the preprocessing stage - cleaning the data of punctuation, white space, html tags, removing stop words, rare words, common words and finally - converting text into its numerical representation via word embeddings. We then trained several classification models to classify a post into its correct category as accurately as possible and built a recommendation system. Finally, we compiled our work together and launched a web app.

RESULTS & DISCUSSION:

The final web app is a recommender/classifier for an online Arts & Craft forum. Recommender systems are everywhere - they're behind suggested products on Amazon, advertisements, and Netflix movie recommendations, for example. Our app uses content-based recommendation, which means that it analyzes the forum posts' text content and calculates the cosine similarity to recommend similar posts.

Similarly, classifiers also have many critical applications - such as spam filtering, tumor detection, and pretty much anything else that requires automatically sorting data into categories based on its features. For example, our classifier predicts which category a post belongs to out of 15 categories (Announcements, Arts & Crafts, etc.) We use roBERTa, a language model from the BERT family - a natural language processing technique developed at Google in 2018. BERT is considered to be one of the best NLP techniques yet.

ACKNOWLEDGEMENTS:

Thank you to Henry Fan for being my mentor throughout the summer; Sophia Kim, director of the Science Learning Institute, for coordinating the SLI summer internships and the excellent seminars; and thank you to my team members and mentors at STEM-away.

Internship at STEM-Away

Sohee Yoon

Summer Quarter 2021

ABOUT YOU:

- Hometown: Seoul, South Korea
- Major/ certificate: Computer Science / AS-T
- Transfer institution: USC
- Year of graduation from Foothill College: June, 2021



PLACEMENT:

Name of company/ institution: STEM-Away

Website: <https://stemaway.com/>

Mission (if a company): The Launchpad For Your STEM Career

Supervisor: Keegan George / Sophia Kim

OBJECTIVE:

Experience with a large scale open source project (Discourse) and data communication with front-end and back-end using API. Experiencing virtual collaboration and communication as a team.

METHODS:

Following the Full-Stack pathway already made by STEM-Away's mentors and uploading self-assessments each week after finishing tasks.

RESULTS & DISCUSSION:

As a final project, our Full-Stack team 4 created a "gallery plugin" in Discourse. Gallery plugin simply outputs the images the user wants to upload in the comment section as a set of images as they are in a gallery.

ACKNOWLEDGEMENTS:

Keegan George, Debaleena Das, All Full-Stack team #4 Members, Sophia Kim, Steve Silva

Teach CS / Video Editor

Daisy Fragoso

Summer 2021



ABOUT YOU:

- Hometown: San Jose, California
- Major/ certificate: Computer Science
- Year of graduation from Foothill College: 2023

PLACEMENT:

Name of company/ institution: Empoder Latinas Code

Website: <https://www.empoder.org>

Mission (if a company): Empowering the next generation of diverse leaders in tech

Supervisor: Marissa Elena Yanez

OBJECTIVE:

Exploring different career path with a computer science degree and teach rising 9th graders HTML/CSS/JS

METHODS:

I had to learn a lot of new skills so I constantly needed to be in constant contact with my supervisor and other intern for any questions that I may have.

RESULTS & DISCUSSION:

Learn the 3-week curriculum of HTML/CSS/JS while learning those languages for the first time for about one week and a half. Then I taught and guide the students in creating their websites for 3 weeks. After the program for about two weeks, I created a google sheet of potential future python lessons for Empoder. For the rest of the internship, I pivoted to video editing of guest speakers and students' website presentation for Empoder YouTube channel

ACKNOWLEDGEMENTS:

I would like to give thanks to my supervisor Marissa Yanez for allowing me to be part of Empoder. Nicole Parziale and Venicia Massey for the constant support while I was learning these new skills.

Intern @ Empoder Latinas Code

Venicia Massey

Summer 2021

ABOUT YOU:

- Hometown: Santa Clara, CA
- Major/ Certificate: Electrical Engineering as a transfer student
- Year of graduation from Foothill College: 2022



PLACEMENT:

Name of company/ institution: Empoder Latinas Code

Website: <https://empoderlatinascodes.org>

Mission (if a company): Empoder is committed to growing and scaling our efforts to empower more underserved girls to pursue careers in Computer-Science, by piloting a virtual version of our flagship Summer Immersion Program.

Supervisor: Marissa E. Yanez

OBJECTIVE:

The goal of my internship was to help take the community work that was being done and make it visual for students, interns, parents, and outside audiences to visualize. This was through branding, social media, and website development.

METHODS:

Along with working with a team, I first did lots of brainstorming. Whether this was through collages of colors, images, or shapes. I took words or phrases that went well with the type of material I was trying to create. For example, a Youtube video covering a speaker series that students watched, would have a gallery view of the students, parts of the presentation the speaker did, & feedback that students gave. Adding shapes, colors, and designs to make these things look appealing to users was the hardest part, which took experimenting with different details and aspects, as well as getting feedback.

RESULTS & DISCUSSION:

The results of my internship was having a developed brand and social media following along with tons of content that reflected upon the work that was benign done within this non-profit. Not only do students get to see the work they have done, but new viewers and other companies can visualize the progress that Empoder has made in communities and hopefully gain more attention. I was able to learn more about non-profits and well as figure out how to brand a company in a way that aligns with its mission and beliefs.

ACKNOWLEDGEMENTS:

My peers: Nicole, Daisy, & Valerie. As well as my supervisor Marissa, SLI director Sophia and her team.

Web Development and Technology Integration Intern at Empoder Latinas Code
Nicole Parziale
Summer Quarter 2021

ABOUT YOU:

- Hometown: Ann Arbor, MI
- Major/certificate: AS in Computer Science for Transfer
- Transfer institution: UCSC
- Year of graduation from Foothill College: 2022



PLACEMENT:

Name of company/ institution: Empoder Latinas Code

Website: www.Empoder.org

Mission (if a company): To inspire and encourage middle-school aged Latinas to pursue computer science degrees and careers.

Supervisor: Marissa Yañez

OBJECTIVE:

To identify ways that technology could be used to make operations more efficient. Also, to completely redesign the existing website to reflect new branding and programs.

METHODS:

For the website overhaul I had to research the best platform and features to implement. I worked with my supervisor and other team members to design a layout wireframe and to decide what content and capabilities needed to be included. After selecting the right tools and having a plan I had to gain an understanding of how to implement them and execute the design according to specifications. This required learning how to develop a custom website in WordPress the leading CMS website builder.

RESULTS & DISCUSSION:

The website redesign resulted in a site that accurately reflects the updated branding and mission of the organization. The new website thoughtfully communicates key messaging in an engaging way by including a responsive design and interactive elements. This will allow Marissa to better attract prospective student, parents, and partners and collect their information. As a beginning non-profit, one of the biggest next steps facing Empoder is the challenging of raising funds. The new website will allow Marissa to court potential investors as well as collect donations directly from the website. The donation plugin I selected for the website includes the ability to accept reoccurring automatic donations which alleviates the need to solicit donors continually. The SMS texting service I implemented will allow messages to be sent in bulk and scheduled ahead of time which means they no longer need to individually text each student and parent in their summer immersion program

Wonseok Choi
Summer 2021

ABOUT YOU:

- Hometown: Gimpo South Korea
- Major/ certificate: Computer Science
- Year of graduation from Foothill College: 2022

PLACEMENT:

Name of company/ institution: SLAC National Laboratory GISMo Team

Website: <https://www6.slac.stanford.edu/>

Mission (if a company): BOLD PEOPLE. VISIONARY SCIENCE.

REAL IMPACT. / Enabling 100% Clean Energy for All

Supervisor: Alyona Teyber



OBJECTIVE:

Do own research using gridlabd's integration capacity analysis feature to improve accuracy and efficiency.

METHODS:

First thing I have done is looking for prior researches. After that, I tried to run current implementation of integration capacity analysis. I found some error there. I fixed the error and then did the sensitivity test of the analysis. Based on the data obtained from it, I did data driven analysis using python Pandas and matplotlib.

RESULTS & DISCUSSION:

I made meaningful plots from the data. I found some points from the plot. I made an automation script for the sensitivity test. I was trying to find the reason why this value comes but I haven't finished it. Instead, I made my script to be able to run other templates as well. If I have a chance to join this team next summer, I want to continue doing research for my works.

ACKNOWLEDGEMENTS:

Name of person, their affiliation

David Chassin, GISMo group manager

Using Machine Learning to Identify X-Ray Single-Particle Images

Eric Florin
Summer 2021

ABOUT YOU:

- Hometown: **San Salvador, El Salvador**
- Major / certificate: **Computer Science and Engineering**
- Transfer institution: **UCLA**
- Year of graduation from Foothill College: **2021**



PLACEMENT:

Name of company / institution: **SLAC National Accelerator Laboratory**

Website: [SLAC Homepage](#)

Mission: **“We explore how the universe works at the biggest, smallest and fastest scales and invent powerful tools used by scientists around the globe. Our research helps solve real-world problems and advances the interests of the nation.” – SLAC National Accelerator Laboratory**

Supervisor: **Chuck Yoon**

OBJECTIVE:

The purpose of our project was to study the performance of several multi-output convolutional neural networks (CNNs) and a twin neural network in classifying X-Ray single-particle images of very small proteins for LCLS deployment.

METHODS:

The project started with the creation of a Python script that visualized networks of proteins based on structure similarity, so that we could look for connections between proteins that could be useful in model development. Unable to find such connections, we started model development by generating simulated diffraction images using 11 proteins used in a recent study. From there, we tested the performance of several multi-output CNNs we had on-hand using the generated images. Afterwards, we developed the twin neural network, and ran the same tests with the same images to compare against the CNNs.

RESULTS & DISCUSSION:

When exposed to bright and clear images, the multi-output CNNs had a high accuracy range of 93% to 98%. However, when exposed to the same images, which were dimmed and filled with simulated noise, the CNNs had a lower accuracy range of 75% to 82%. With the same dimmed and noisy images, the twin neural network had a high accuracy range of 93% to 99%; however, it needed 32 features (or characteristics) of an image during the classification. For future work, we would like to train the models using experimental data collected at LCLS from a variety of different proteins and experiment setups. We would also like to have the models classify diffraction images of proteins it did not see during the training process. This project could help LCLS in developing better machine learning models to identify single-particle images from so-called "multi-hit" images from diffraction image experiments. In these experiments, single-particle images are important as they are used in reconstructing the 3-D structure of a protein. By having high accuracy models like the twin neural network identify single-particle images from experiments, it could lead towards better 3-D reconstructions of proteins.

ACKNOWLEDGEMENTS:

Chuck Yoon – Mentor; Software Developer and Research Scientist at SLAC.

Ariana Peck – Project Scientist at SLAC.

Frédéric Poitevin – Associate Staff Scientist (LCLS) at SLAC.

Monarin Uervirojnangkoorn – Software Developer at SLAC.

Enrique Cuellar – Director of SULI and CCI Programs at SLAC

Rebecca Flores – Talent Pipeline Program Administrator at SLAC.

Sophia Kim – SLI Director.

Steve Silva – SLI Intern Mentor.

Henry Fan – SLI Intern Mentor (focused on technology).

Summer Intern at SLAC

Hao-Ting, Tso

Summer 2021



About Me:

- New Taipei City, Taiwan
- Computer Science, B. S.
- University of California, San Diego
- 2021

Placement:

- SLAC National Accelerator Laboratory
- <https://www6.slac.stanford.edu/>
- We explore how the universe works at the biggest, smallest and fastest scales and invent powerful tools used by scientists around the globe.
- Dr. M. G. Dainotti

Objective:

The goal is to publish a research paper for the relations regarding different physical properties of the Gamma-Ray Bursts.

Methods/Processes:

1. Data gathering: Our team was gathering data mostly manually before, and I was there to utilize my knowledge of programming to help them complete the tasks automatically.
2. Data analysis: After gathering data, my colleagues and I worked on the analysis and using Python to help visualize the data points. We developed software to do the analysis and improved the efficiency of the process throughout the time.
3. Writing: After doing all the analysis, we started the writing and at the same the verification of our analysis. Also, we worked hard on the bibliography for the literature we cited.

Results And Discussion:

The final goal of this internship is to publish the paper with our conclusions of the observations and the analysis. My job is mostly to help them with all the tasks that could be done automatically with programming. At the same time, I was trying to develop the kind of software that can be saved and used by others in the future for those manual tasks.

Acknowledgment:

- Sam Young, University of Pennsylvania
- Nicole Osborn, Purdue University
- Puerto Rico Research Group

A Stellar Model

Taylor Gorkos

Summer 2021

ABOUT YOU:

- Hometown: Cumming, Georgia
- Major/ certificate: Planetary Science
- Transfer institution: UC Santa Cruz
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company/ institution: UC Santa Cruz Astrophysics

Website: <https://www.astro.ucsc.edu/>

Supervisor: Dr. Raja Guhathakurta

Chair of Astrophysics at UCSC

OBJECTIVE: Create the most accurate model to date of the kinematics of red-giant branch stars in the Andromeda galaxy.

METHODS: Import velocity data from RGB stars in Andromeda into a Python notebook, then compare our model to reality and adjust. We created a class, "fakedisk", that we manipulated to form the model, then accessed that class in our code with the numbers that made the model accurate.

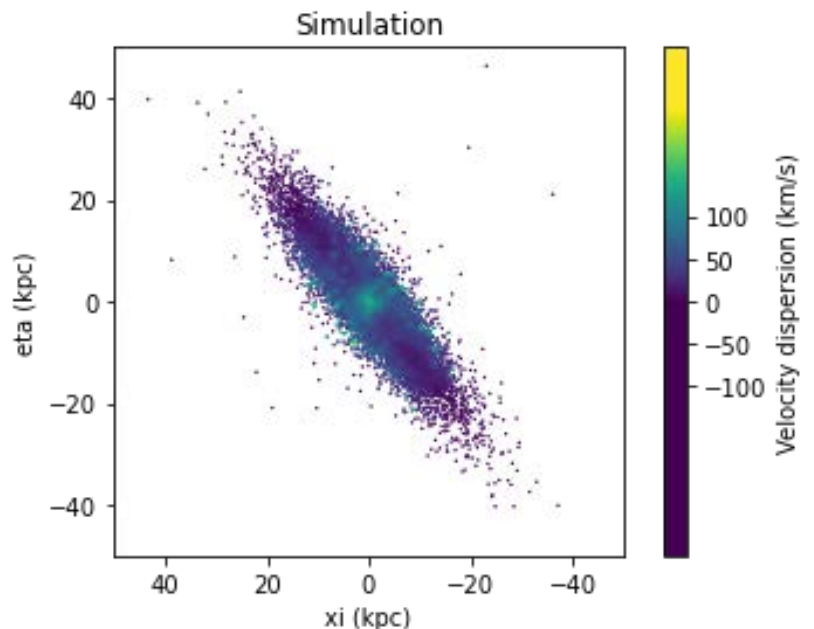
RESULTS & DISCUSSION: The model that resulted from our research and code should be the most accurate depiction of the kinematics within Andromeda that the astronomy community has seen. It provides a visual representation of the stellar velocity dispersions in M31's disk and halo.

ACKNOWLEDGEMENTS:

Dr. Geoff Mathews- Foothill College - Professor and mentor

Kaela McConnell - Yale University - Mentor

Penelope Strong - Colleague



USCS SIP Astronomy

Jianzhong He

2021 Summer

ABOUT YOU:

- Hometown: Guangzhou, China
- Major/ certificate: Physics
- Transfer institution: UC Berkeley
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company/ institution: UC Santa Cruz

Website: <https://sip.ucsc.edu/>

Mission (if a company):

Supervisor: Douglas Grion Filho

OBJECTIVE:

Analyze 1D spectra obtained with the DEIMOS spectrograph on the Keck II 10-meter telescope and the Hydra spectrograph on the CTIO Blanco 4-meter telescope. Work with visually-classified and machine-classified populations of rare stars in M31, M33, and the LMC

METHODS:

Use existing Python software and write custom software to analyze and compare these M31, M33, and LMC samples in terms of the following diagnostics: various HST and ground based color-magnitude diagrams (with theoretical stellar tracks overlaid), fraction relative to normal oxygen-rich stars, co-added spectra, kinematics (line-of-sight velocity dispersion and asymmetric drift relative to neutral hydrogen), and others.

RESULTS & DISCUSSION:

The templates of Weak CN and Carbon stars generated from the M33 and LMC galaxies show a significant difference in the spectrum due to the composition of elements. Using these templates, the Chi square value for each of the stars is calculated to show how close the star is to the given template. The HST, fraction graphs, the comet plots are also created to show the variance between our target stars and the template. Essentially Weak CN stars in the head of the comet figure are basically all weak CN and this amount of weak CN stars have the machinery for automatically classifying stars. The automation strategy is modified and sharpened as we get a higher degree of accuracy.

ACKNOWLEDGEMENTS:

Tibu Batriedo : Interns at UCSC Astronomy project

Dhruv Trivedi : Interns at UCSC Astronomy project

Luiza Montecchiari: Interns at UCSC Astronomy project

Douglas Grion Filho: Primary mentor

Professor Raja Guhathakurta, Joey Salinas: Secondary mentors

R&D Product Development Engineer Intern

Cindy Tung

Summer 2021

ABOUT YOU:

- Hometown: Palo Alto
- Major: Bioengineering
- Transfer institution: University of California, Berkeley
- Year of graduation from Foothill College: 2021



PLACEMENT:

Name of company: Potrero Medical

Website: <https://potrered.com>

Mission:

We are a predictive health company on a mission to help physicians transform patient care by developing a predictive technology platform for early detection of acute kidney injury and critical illnesses. We believe our platform will provide doctors and nurses more time at the patient's bedside and less time managing technology.

Supervisor: Jackie Dulken

OBJECTIVE:

Learn basic prototyping practices such as 3D printing and 3D design in SolidWorks. Obtain a general understanding of medical device verification practices and learn about device hardware through hands-on projects.

METHODS:

My projects revolved heavily around working in the lab and making changes to test protocols. I identified requirements that needed to be changed or added, and drafted test cases needed to test those requirements. In addition, I began the preliminary testing phase for a pneumatic system by building a prototype and running bench testing for the new design.

RESULTS & DISCUSSION:

The work I performed this summer helped move along many projects for the R&D Team, including a major upcoming software update for our device. Among those is a change to extend the product battery life. Through this experience, I became familiar with the verification and validation (V&V) process that takes place during any design change at a medical device company.

ACKNOWLEDGEMENTS:

Lynn Chung, R&D Test and Verification Technician at Potrero Medical

Ron Chavez, Director Customer Service and Support at Potrero Medical

R&D Internship at a Biomedical Start-up

Madison Pearson

Summer 2021

ABOUT YOU:

- Hometown: El Paso, TX
- Major/ certificate: Chemistry, Biology, Spanish
- Year of graduation from Foothill College: 2022



PLACEMENT:

Name of company/ institution: Intact Therapeutics

Website: <https://intacttherapeutics.com/>

Mission: Provide best-in-class efficacious and patient-centric topical therapies for the treatment of gastrointestinal diseases

Supervisor: Ravinder Pamnani

OBJECTIVE:

Acquire hands-on analytical chemistry techniques in the lab and gain experience in chemical formulation methods/experimentation, to possibly include 1) gel formulation, 2) blood clotting assays, 3) mucoadhesive properties & related reactions, all recorded in a lab notebook.

METHODS:

The method for the gel formulation was to combine different ratios of the blood clotting drug in combination with gelling polymers and test their gelation temperature. These gels were then run through a blood clotting assay (BCA) to see if they sped up clotting. Finally, the mucin gel project involved reacting mucin with a strengthening polymer and testing various ratios of mucin/weight percents. Once the ideal formula was determined, I cut the mucin into disks and soaked it in fluorescently labelled mucoadhesive gels to see how well they adhered to the mucin.

RESULTS & DISCUSSION:

The gel formulations that Priyal and I made showed promise and will be used for in vitro rat tail studies to further test their clotting abilities. As for the blood clotting assay (BCA) itself, I researched and implemented a new method to improve safety. The original BCA was an open system, produced liquid waste, and was time-consuming. The new method is a closed system, eliminates liquid waste, and is three times faster. The long-term impact is that I was able to bring up my concerns about lab safety. I am grateful that my input was well-received and was happy to help introduce safety protocols/procedures for the company going forward. Finally, the mucin disk formulation and preliminary mucoadhesivity experiments will help with the ultimate goal of providing data that supports the viability of the product in order to receive grants/funding.

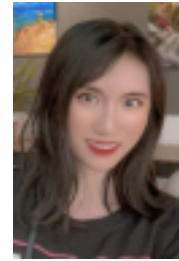
ACKNOWLEDGEMENTS:

Ravinder Pamnani, supervisor. Jeffrey Linhardt and Chris Zhan, R&D chemists. Priyal Sarda and Alex Linhardt, summer interns at Intact Therapeutics.

Mobile Developer @ Alio

Ying (Wendy) Sun

Summer 2021



ABOUT YOU:

- Hometown: San Francisco, CA
- Major/ certificate: Computer Science
- Transfer institution: University of Illinois At Urbana – Champaign (Master’s CS Program)
- Year of graduation from Foothill College: 2021

PLACEMENT:

Name of company/ institution: Alio

Website: www.alio.ai

Mission (if a company): We are a wearable technology company enabling greater insights through clinical grade real-time data.

Supervisor: Sam Chisholm, Jim Reich

OBJECTIVE:

Developed an Android application that communicates with a body-worn non-invasive medical device over **Bluetooth** (BLE). Implemented a command dashboard for the device to collect sensor data to pass to the cloud for further processing.

METHODS:

I utilized android studio, BLE techniques, Java, Python in the internship. Here are some major steps for me to accomplish the project:

- 1) Understand the choice of BLE over Bluetooth, the BLE communication components, the flow of BLE communication and data storage, BLE devices communication with AWS IoT MQTT broker via Android devices.
- 2) Design the entities and their relationships for the Android application.
- 3) Search necessary libraries for the application.
- 4) Create entities in android studio.
- 5) Look up ways to test the code since the emulator did not have BLE function.
- 6) Test run the codes.
- 7) Design, create, and test codes for data transmission.

RESULTS & DISCUSSION:

I was able to deploy a Bluetooth (BLE) scanning app that can detect surrounding BLE devices including the patch. A list of detected devices will be displayed on the screen once the scanning is done. The user is able to click on a specific device to choose to connect and check the RSSI signal. I am also working on another part of the project, the implementation a command dashboard for the device to collect sensor data to pass to the cloud for further processing. In this part, I securely relayed commands and data to the cloud infrastructure.

During this internship, I was able to use an alternative platform, the android application for the smart patch connection and also the dashboard. It is more convenient because most people have smart phone or tablet now in days.

ACKNOWLEDGEMENTS:

Special thanks to
Sam Chisholm - Alio
Jim Reich - Alio
Sophia Kim -SLI
Steve Sliva - SLI