Fajar Dirham

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Education

University of California San Diego — Expected graduation: June 2022
Bachelor of Science, Computer Engineering — GPA: 3.915 | Major GPA: 4.0

Skills

Java, C++, C, C#, React, React Native, Arduino, Python, Blender

Vim, GDB, Valgrind, Bash, Git

Activities

- Tau Beta Pi Honor Society house leader
- IEEE Quarterly Projects Mentor
- CSES social staff
- Speech and Debate
- AIAA Distinguished Lecturer Committee
- Eta Kappa Nu Honor Society

Course Work

- Data Structures & Object-Oriented Design
- Computer Org. & Systems Programming
- Circuits and Systems
- Analog Design
- Software Tools & Techniques
- Linear Algebra
- Differential Equations
- Discrete Mathematics
- Calculus & Analytical Geometry for Science and Engineering
- Mathematics for Algorithm and Systems

Foreign Languages

Indonesian (Native tongue)
German (4 classes in UCSD)
Spanish (Highschool elective)

Work Experience

Software Engineer & Designer *Summer EnVision Experience*

July – September 2019

- Created a virtual reality exhibit for Birch Aquarium in 10 weeks
- Final deliverable: robust kid friendly fish masks that played 360-video
- Workshops: wood working, **Arduino**, and **Auto CAD (SolidWorks)**
- Product design phases: Systems Requirement Review, Preliminary Design Review, Critical Design Review
- User testing and experience, **software development**
  - **Unity** and **C#** to make a 360-video player app
    - App created using **OpenVR** SDK
    - Responds to user input
    - Plays videos stored in disk
  - Plug and play system for the Acer Windows Mixed Reality headset and a windows computer through **Batch scripting**

Project Experience

SayWatt *Second Place Winner IEEE Quarterly Projects* | June 2019

- **IoT** multi-platform **mobile app** that controls light switches through Wi-Fi
- "Flipper" device, using an ESP-8266 Wi-Fi microcontroller, interacts with the light switches and communicates with the app
- Eco-friendly: Product designed to reduce household electrical consumption
- Coded purely in **React Native** and uses **Expo** as a deployment platform
- ESP uses **Arduino** to connect to Wi-Fi and control the "flipper"

Steady Hands *Start-R funded project team* | Jan 2019 - Present

- Developing gloves to alleviate elderly hand tremors
- Computer engineer
  - Prototyping a glove that tracks hand tremors.
  - **Embedded Systems**
  - Uses **potentiometers**, **flex sensors**, and **accelerometers**
  - In charge of **circuit design**
  - **Arduino** work and assisted with **Auto CAD (SolidWorks)** models
  - **Python** to process serial input and animate hand movements in **Blender**

Stakks *SD Hacks 2019 project* | October 2019

- Web app for a study group finder and assistance app
- Used Firebase for back end
- Front end using **React** and **CSS**

Disk based Binary Tree *Data structures class project*

- Used **C++** to implement a **Binary Search Tree**
  - Relied on the **templates** feature of **C++**
- Uses disk for storage, debugged using octal dumps