Bianca Champenois

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Education

University of California, Berkeley 2016 - 2020 — B.S. Mechanical Engineering — 3.9 GPA

Relevant Coursework:

Dynamics, Finite Element Analysis, Fluid Mechanics, Heat Transfer, Energy Conversion Principles, Dynamic Systems and Feedback, Thermodynamics, Three Dimensional Modeling and Design, Manufacturing and Tolerancing, Programming for Engineers, Structure and Interpretation of Computer Programs, Data Structures, Information Devices and Systems

Work Experience

DAAD RISE / Research Assistant at Technische Universität Hamburg, Germany

May 2019 - August 2019

Coded control and reinforcement learning algorithms to maximize the power output of an acrobot pendulum that is excited by ocean waves. Used Raspberry Pi to collect data on the performance of the pendulum.

Environmental Fluid Mechanics and Hydrology Lab / Research Assistant at UC Berkeley

January 2019 - PRESENT

Set up instruments and experiments to study the effect of surface flow on methane emissions from wetlands. Used Raspberry Pi to collect data on the relationship between the flow velocity and the rate of diffusion of gases.

Cal Energy Corps / Research Assistant at Tecnológico de Monterrey, México

May 2018 - August 2018

Designed PCBs for power converters that will be for solar panel integration. Selected and assembled passive and active components for circuits. Tested the converter and gathered data on its performance. Used LabVIEW to simulate the converter and design controllers to adjust the duty cycle of the circuit.

BicyCAL / Head Mechanic

October 2017 - PRESENT

Led repairs for five hours each week at a student-run bike shop while teaching customers how to fix their own bikes. Held weekly workshops for women to learn in an inclusive environment. Organized and taught a semester long class with lectures, worksheets, and assignments on bike repair and maintenance. Mentored students at Richmond High School through the process of building an electric bike for a competition.

Activities and Projects

Jacobs Institute Innovation Catalysts Spark Grant: Binary Marbles

January 2019 - May 2019

Designed and manufactured a binary calculator that uses mechanical gates and marbles to represent electrical transistors and current. The final product teaches anyone interested in computer science about binary, computer architecture, abstraction, and logic in a unique and interactive way. Presented on my work at the Futures of Academic Making symposium.

Solar Spring Break / Fundraising Leader

August 2016 - May 2017

Led a team of 12 students to raise $5,000 for Grid Alternatives. Installed solar panels on underserved Richmond residences over spring break while learning about the renewable energy industry.

Engineers for a Sustainable World / Lead Scientist

August 2016 - December 2016

Researched ideal composting conditions. Designed and built three mechanized compost turners in the wooshop using recycled materials to reduce food waste on campus and teach students about zero waste.

Skills and Awards

Technical: Python, Java, MATLAB, ROS, Pandas, AutoCAD, SolidWorks, Fusion, KiCad, Machine Shop Trained.

Language: Fluent in French and Spanish.

Awards: Aptiv Future of Mobility Scholarship (2018), Chevron Scholarship (2017), MIT Leadership Award (2016)