Jeremy Paradie

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Summary

Creative maker with strong work ethic, leadership, communication, analytical, and technical skills. Self-directed, intellectually curious, and vision-driven. Experienced problem solver focused on supporting development of responsible technology and policy, with a focus on makerspaces as a context for facilitating paradigm change toward an equitable future in the fields of personalized education, local manufacturing, and networked knowledge.

Education

Master in Design for Emergent Futures December 2022
Institute for Advanced Architecture of Catalonia; Elisava School of Design and Engineering; Fab Lab Barcelona

Bachelor of Science with Individual Concentration in Creative Mechatronics May 2020
University of Massachusetts Amherst; Cumulative GPA: 3.794; Major GPA: 4.000

Certificate: Design for Robotics July 2021
Institute for Advanced Architecture of Catalonia; Global Summer School

Work Experience

M5 Makerspace for Electrical and Computer Systems Engineers, UMass Amherst

Manager September 2016 to October 2017
- Managed student staff and volunteers; Tracked finances; Generated and delegated tasks; Achieved goals
- Conducted weekly staff meetings, resolved day-to-day issues, and managed secure access of equipment
- Proposed, selected, and managed team for complete reorganization of layout, equipment, and storage system
- Coordinated logistics with departmental university staff; Proposed and implemented new workflows
- Advised director of makerspace in considering future makerspace projects and initiatives; Onboarded successor

Teacher Assistant: ENGIN 112—Intro to Electrical and Computer Engineering April 2016 to October 2018
- Brainstormed with professor about lab curriculum, developed prototypes, and acted as substitute TA

Staff January 2015 to May 2020
- Supported students by providing technical assistance, instruction, and mentoring
- Developed robotics platform to enable rapid prototyping at competitive student events
- Resolved hardware and software issues and performed maintenance on machines, especially 3D printers
- Generated purchase orders for parts and tools to support makerspace improvement projects
- Taught workshops: Surface mount soldering and rework, Servos and motors, Power supplies, Arduino, Lab equipment, Batteries, Grounding, PID control, CAD and 3D printing, ATtiny, Hardware hacking, and others

All-Campus Makerspace, UMass Amherst

Staff on Planning Committee February 2019 to August 2020
- Developed thorough 50-sheet spreadsheet tool for planning makerspace equipment based on space constraints
- Presented planning tool to faculty stakeholders and solicited feedback for improvement
- Selected equipment for first all-campus pop-up makerspace; Helped move in; Supported faculty and staff

Diagnostic Drones, Ashland, MA

Mechatronics Engineering and Design Intern May 2018 to September 2021
- Brainstormed, developed, and quantified design concepts to determine best approach to solution
- Designed 8-DOF 500+ part robotic assembly in SolidWorks to deliver 5 instruments to target location
- Ordered, received, assembled, tested, analyzed, and documented each subassembly; Constructed end effector

Animal Behavior Robotics Lab, Hampshire College

Mechatronics Engineering and Design Consultant May 2017 to May 2020

- Analyzed, repaired, restored, and fixed bugs in Arduino-based robotic squirrel data acquisition system
- Designed electronics for new, more functional ARM-based wireless robotic squirrel data acquisition system
- Supervised 4 students' independent studies; Led 10-person development team to implement new control system

Teacher Assistant: CS 277—Animals, Robots, and Applied Design September 2018 to December 2018

- Composed lesson plans and guest-lectured intro to Arduino classes with practical hands-on focus
- Supported students by providing individualized technical assistance for their animal robot projects

Landscape Architecture Department, UMass Amherst

Mechatronics Engineering and Design Consultant January 2017 to November 2018

- Developed prototype electrical and mechanical systems for piezoelectric walkway; Evaluated practicality
- Prototyped solar-powered, pressure-sensitive, light-emitting, ripple-producing, interactive walkway pavers
- Engineered complex hardware modifications to consumer products for interactive public installation in Boston

Teacher Assistant: LANDARCH 592M—Material Experiments March 2017 to April 2019

- Supported graduate students with technical assistance and mentoring on various material experiment projects

Abbess Instruments and Systems, Holliston, MA

Hardware and Software Systems Developer Summer 2015 and 2016

- Developed automated thermal vacuum chamber control systems which utilized PID control to attain setpoints
- Designed robotic systems for three dimensional item movement and dispensing using SolidWorks
- Installed industrial electrical devices including embedded computers and revised electrical schematics
- Led software development team; Implemented system functionality; Improved human-machine interface

Independent Projects

Digital Materials Research 2017 to 2021

- Investigated and built lattice structures that lend themselves functionally to robotic assembly
- Designed and simulated self-mating surfaces and interlocking geometries that can be 3D printed in single job
- Printed 2000 parts and assembled 5x5x4 voxel reversibly constructed cellular lattice structure

Other Projects 2014 to 2018

Remote-controlled hobby truggy; 8x8x8 RGB LED Cube; Particle simulations in Java; hacked toy RC car; Hydraulic popsicle stick excavator; Pointless box; Custom power supply; Calculus with op-amps; Wooden gear mechanism; ATtiny programmer; Musical plant; Color POV display; Autonomous omni-wheel lidar robot; Closed-loop robotic arm

Programming Languages

Proficient: Java, C/C++, Arduino, Mbed, Processing, DAQFactory, JavaScript, Scratch, AppInventor, OpenSCAD, AutoHotkey
Familiar: Python, HTML, MATLAB, Verilog HDL, Lua, GCode, MIPS Assembly, LabView, Batch, MDrive MCode, XSLT, LaTeX, RLL

Activities/Awards

- UMass Amherst Commencement 21st Century Leaders Award Recipient 2020
- Gerald F. Scanlon UMass Amherst Student Employee of the Year Award Recipient 2019
- Photo submission selected for UMass Amherst Digital Media Lab's Research Art-Science Exhibition 2019
- UMass Stonewall Center/Queer & Trans People of Color: Rainbow dance lighting design team member 2018
- Hackathons & Maker Fairs: UMass, Hampshire College, Amherst College, NYC, Barcelona 2015 to present
- First Robotics Competition Team Leader: Team 2262 Holliston—Tote-stacking robot 2014 to 2015
- Samsung Mobile App Academy at MIT; National App Concept Competition Winner: Goods2Give 2014
- Eagle Scout; Troop 14 Holliston; Senior Patrol Leader 2014