

CHRIS PRASANNA

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📍 Seattle, WA



👤 SUMMARY

Detail-oriented mechatronics engineer passionate about advancing autonomous systems and improving human-robot collaboration through cutting-edge research. Hands-on experience prototyping robotic systems and highly proficient in software development, hardware integration, system modeling, machine learning, and advanced control solutions.

🛠 SKILLS

• Controls, Robotics, & Machine Learning

Autonomous Algorithms Sensor Fusion

Modern & Classical Control Simulations

Optimization Realtime Control HCI

State Estimation AI DL RL DSP

Monte Carlo Mthds FSMs HILO

• Rapid Prototyping & Hardware

Embedded Systems Serial Interfaces

MCUs HIL Testing Circuits DAQ

Sensors 3D Printing CNC Machining

Servo Actuators/Motors Safety Testing

• Software Development Tools

Python C/C++ MATLAB LabVIEW

Git Pytorch Optuna OpenAI Gym

Arduino Linux RTOS HTML/CSS

🎓 EDUCATION

M.Sc. in Mechanical Engineering – Robotics, Controls, & Mechatronics
University of Washington – GPA: 3.9/4.0
📅 Expected December 2021

B.Sc. in Mechanical Engineering
Cal Poly, San Luis Obispo – GPA: 3.5/4.0

🏆 ACHIEVEMENTS

- 2 first author publications in progress
- Best conference presentation award
- Embedded systems leadership award

📁 RELEVANT WORK EXPERIENCE

Robotic Prosthetic Controls & AI Researcher

University of Washington

📅 Jul 2019 – Present

- Invented a self-learning & adaptive controller for a robotic prosthesis which significantly improved amputee walking symmetry 🚀
- Developed efficient realtime software which reliably executed sensor sampling, state estimation, & adaptive control tasks 🚀
- Constructed a 3D-printed embedded system which included various sensor interfaces, custom circuits, & servo actuator control
- Built deep neural networks in Python/Pytorch to accurately model nonlinear system dynamics for simulations & robotic AI training 🚀🚀
- Executed HIL & verification tests for performance & safety evaluation

Research & Test Engineer

Center for Limb Loss & Mobility

📅 Feb 2018 – Jul 2019

- Created an environmental controller using custom C++ software & temperature sensors which reduced steady state errors to 3.5% 🚀
- Implemented localization & signal processing methods to detect objects & track 3D motion from high-speed video data 🚀
- Mentored 4 students & collaborated across 5 engineering teams

R&D Engineering Co-Op Intern

Brooks

📅 Jun 2016 – Jan 2017

- Automated tasks & reduced the time need to complete product & analysis pipelines by 66% using custom MATLAB software 🚀
- Presented cross-functional reports for future product development

🔧 NOTABLE PROJECTS

Force Control Design with Deep Reinforcement Learning

Center for Limb Loss & Mobility

📅 Aug 2021 – Present

- Developed end-to-end machine learning modeling & deep reinforcement learning for real-world robotic prosthetic force control
- Utilized deep learning techniques and the Pytorch framework to create high-fidelity system simulations based on sensor training data

Tetris-Playing AI Agent Development

University of Washington

📅 Sep 2020 – Dec 2020

- Programmed Tetris-playing AI agents in Python which cleared over 88,000 lines, beating the Guinness Record of 4,988 🚀🚀
- Applied 2 reinforcement learning methods (genetic algorithm and monte carlo analysis via cross entropy) to train the AI learners

Cerebral Palsy Rehabilitation Product Design & Fabrication

United Cerebral Palsy (UCP) & Cal Poly

📅 Jan 2017 – Dec 2017

- Designed, built, & tested an underwater cycle which empowered clients with cerebral palsy to safely practice their motor control 🚀