ERANDA SOMATHILAKE

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Mechanical engineering PhD candidate with expertise in control theory seeking for an internship opportunity.

EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO

PhD candidate specializing in nonlinear control. *Sept. 2022-present*

- Completed the requirements for a master's degree, GPA 3.770/4.000.
- Took classes on linear systems, linear control, nonlinear systems, nonlinear control, optimal control, optimal estimation, optimization, sensing and estimation in robotics, and safety for autonomous systems.

UNIVERSITY OF PERADENIYA, SRI LANKA

B.Sc. Engineering with specialization in mechanical engineering. *Jul. 2020*

- Graduated with first class honors, GPA 3.95/4.00.

SKILLS

Programming: MATLAB, Simulink, Python, C++

Modeling & Design: SolidWorks, AutoCAD, Ansys, Proteus

Professional: Technical Writing, Research and Development, Team Collaboration

EXPERIENCE

PhD Candidate, University of California, San Diego *Sept. 2022 - present*

- Research focused on controlling sediment flow in rivers while considering ecological preservation of the riverbed.
  - Various control methods such as event-triggered control and adaptive control strategies were considered.
  - Control algorithms were verified via modeling and simulation in MATLAB.
  - This led to multiple conference publications and a journal publication in Automatica.
- Worked as a teaching assistant for graduate-level control classes and undergraduate design classes.

Volunteering Research Assistant and Teaching Assistant, University of Peradeniya, Sri Lanka *Aug. 2020-Aug. 2022*

- Worked on a sea wave energy extraction project where a spherical wave energy converter was modeled using rigid body mechanics with minimal approximations to match to real-world performance. The model was simulated and verified in MATLAB.
- Was part of a biomedical project where fetal movement identification using a low-cost, simpler device was analyzed as an alternative to the existing bulky, expensive equipment. Data was obtained using an IMU and analyzed using deep learning and signal processing techniques.
  - This led to a publication in IEEE Transactions on Instrumentation and Measurement.
  - The research was further extended to injury prevention and motion identification in athletes by following similar concepts.
- Conducted classes for undergraduates in Mechatronics, Machine Design, and Engineering Drawing. Graded laboratory reports and assignments.

Internship as a Research Engineer, CodeGen International (Pvt.) Ltd., Colombo, Sri Lanka *Feb. 2019-May 2019*

- Worked on the development of UAVs where Kalman filtering was applied for position and attitude estimation.
- Worked on modeling and simulation of quadcopters using rigid-body mechanics. The theoretical models were verified via MATLAB simulations and implemented on physical devices.

Internship as a Mechanical Engineer, Sri Lanka Railways, Colombo, Sri Lanka *Oct. 2017-Jan. 2018*

- Worked as a mechanical engineer at Sri Lanka Railways, studying and assisting with the repair and maintenance of locomotives.
- Gained practical knowledge and experience in the repair and operation of diesel engines, electric motors, and general maintenance processes.

AWARDS AND PRIZES

Prize for best performance in mechanical engineering (2020), University of Peradeniya.

Prize for best performance in mechanics of machines (2020), University of Peradeniya.

EXTRACURRICULAR ACTIVITIES & INTERESTS

Practiced karate and won multiple provincial and inter-university tournaments and awards.

Enjoys hiking, reading, gaming, and listening to music.

Volunteered in a teaching program for impoverished schools as an undergraduate student.