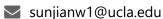
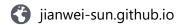
Jianwei Sun



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in /jianwei-sun

Education

UCLA | Los Angeles, CA

Ph.D. & M.Sc. in Systems and Control

Sept 2019 - June 2024 (Expected)

Cumulative GPA: 3.96/4.0

ETH Zürich | Zürich, Switzerland

M.Sc. in Electrical Engineering

Sept 2017 - Sept 2019

Cumulative GPA: 5.71/6.0

University of Toronto | Canada

B.A.Sc. in Engineering Science (ECE)

Sept 2012 - June 2017

Cumulative GPA: 3.79/4.0

Publications

Sensor Reduction, Estimation, and Control of an Upper-Limb Exoskeleton

Feb 2021, Robotics and Automation Letters (RA-L)

Vehicle Platoon Control with Virtual Path Constraints

Aug 2019, IEEE Conference on Control Technology and Applications (CCTA)

Admittance Control Scheme Comparison of EXO-UL8: A Dual-Arm

Exoskeleton Robotic System

June 2019, IEEE Conference on Rehabilitation Robotics (ICORR)

Synthesis of a Multi-beam Dual Reflectarray Antenna using Genetic Algorithms

July 2017, IEEE Symposium on Antennas and Propagation (APS)

Skills

Programming

C/C++, Python, MATLAB, Java, Ruby

Software

Cadence Allegro, Altium, Simulink, LTSpice, ModelSIM, SolidWorks

Hands-on

Soldering, hardware validation, circuit debugging, prototyping

Work Experience

Apple | Wearable Systems (Internship)

Sept 2018 - Feb 2019 | Cupertino, CA

- Designed a drop-in test SIP for the Apple Watch to quantify coexistence issues in system form-factor
- Developed software toolchain to automate data extraction, analysis, and processing

Intel | Programmable Solutions (Internship)

June 2017 - Sept 2017 | San Jose, CA

- Developed hardware interfaces for a 4K video encoder on a PClebased FPGA accelerator card
- Simulated and debugged hardware with ModelSim and VCS-MX

Apple | Wearable Systems (Internship)

May 2015 - May 2016 | Cupertino, CA

- Developed a generic hardware validation platform and fault-tolerant software to stress-test a sensor subject to unpredictable failures
- Successfully identified a rare reliability failure mode and aided crossfunctional teams in arriving at a mass-producible solution

Research Experience

University of California, Los Angeles (UCLA)

Feb 2019 - Present | Bionics Lab

- Developed virtual dynamics to improve admittance control of a bimanual 8 DoF upper-limb exoskeleton for physical rehabilitation
- Developed a Kalman filter-based sensor fusion method to achieve similar human-exoskeleton transparency with a subset of sensors
- Implemented a rate-limiting filter to suppress unstable humaninduced oscillations due to physiological and mechanical time delays

Swiss Federal Institute of Technology (ETH Zürich)

Feb 2018 - Aug 2018 | Institute for Dynamic Systems and Control

Developed a distributed admittance controller for human-robot interaction with a path-constrained quadcopter platoon

Oct 2017 - Feb 2018 | Computer Engineering and Networks Laboratory

• Developed a radio-based ultra low power (\sim 10 μ W) clock synchronizer with nanosecond precision for wireless IoT devices May 2016 - Aug 2016 | Institute for Dynamic Systems and Control

Characterized brushless motor dynamics for quadcopters

University of Toronto

Sept 2016 - June 2017 | Reconfigurable Antenna Laboratory

 Developed a genetic algorithm-based optimizer for beam synthesis on a Cassegrain reflectarray antenna system

National University of Singapore

May 2014 - Aug 2014 | Mechanical Engineering

Characterized dielectric elastomer dynamics for use as artificial muscles and developed a 5kV power supply waveform generator