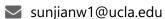
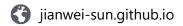
# Jianwei Sun



**L** +1 (310) 923-6599



in /jianwei-sun

## **Education**

UCLA | Los Angeles, CA

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

Sept 2019 - 2024 (Expected)

Cumulative GPA: 3.98/4.0

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**

Suppressing Delay-Induced Oscillations in pHRI with an Upper-Limb Exoskeleton using Rate-Limiting

Oct 2022, (IROS)

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

Feb 2021, (RA-L)

**Vehicle Platoon Control with Virtual Path Constraints** 

Aug 2019, (CCTA)

**Admittance Control Scheme** 

Comparison of EXO-UL8: A Dual-Arm

**Exoskeleton Robotic System** 

June 2019, (ICORR)

Synthesis of a Multi-beam Dual Reflectarray Antenna using Genetic

**Algorithms** 

July 2017, (APS)

### **Skills**

### **Programming**

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

#### **Software**

Mujoco, Cadence Allegro, Altium, Simulink, LTSpice, SolidWorks

#### Hands-on

Soldering, hardware validation, circuit debugging, prototyping

# **Work Experience**

**Skydio** | Autonomy (Internship)

June 2022 - Sept 2022 | San Mateo, CA

- Evaluated feasibility of an emergency three-rotor recovery landing
- Implemented and tested an IMU-based reduced-attitude controller and dynamically feasible optimal braking and landing trajectories

**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 (~10  $\mu W)$  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