Randall Scharpf

randall.scharpf@gmail.com │ Torrance, CA │ (310)-504-4716 │ randallscharpf.com

Education

| **University of California, Los Angeles (UCLA)** | Expected graduation: | June 2025 |
| *Bachelor of Science in Computer Science* | Cumulative GPA | 3.843 |

Courses:

Math 61	Discrete Structures	A
CS M151B	Computer Systems Architecture	A+
CS 118	Computer Network Fundamentals	A

Leadership and Technical Experience

Bruin Spacecraft Group

| *Project Rapid Electrical Power System Lead* | November 2021 - Present |
| *Project Rapid Chief Engineer* | June 2023 - Present |

Accomplishments:

- Validated 18650 Li-Ion battery models using custom data acquisition circuit, to inform system design
- Assembled custom printed circuit boards to prototype and test DC/DC voltage conversion
- Negotiated updated requirements with UCLA Plasma, Energy, and Space Propulsion Laboratory
- Expanded satellite electrical subteam from 2 to 7 members and instituted new task organization system

Bruin Formula Racing

| *General Member* | November 2021 - Present |

Accomplishments:

- Accelerated dashboard from 3 to 30 frames per second by optimizing code
- Redesigned thermal camera driver to fit on microcontroller with 2KB RAM
- Improved simultaneous plotting capabilities for data visualization Python program
- Designed balancing circuit for supercapacitor power supply filter

Northern Tier National High Adventure

| *Wilderness Canoe Guide* | June 2023 - August 2023 |

Accomplishments:

- Earned Superior National Forest guide license, Wilderness First Aid certification, and CPR certification
- Led 5 crews on over 380 miles of canoeing and 140 portages over 34 days
- Taught identification of native berries, plants, birds, and mammals to scouts
- Provided insight into local anthropology and geological history

Skills

Languages	Frameworks	Microcontrollers	Sensors
- Java	- Java Swing	- Arduino	- Quadrature Encoders
- C++	- jUnit	- STM32	- NTC Thermistors
- Python	- React	- PIC10	- Gyroscopes
- C	- Wordpress API	- SAM D51	- Ultrasonic Sensors
- Javascript			

Activities and Projects

Pacific Crest Drum and Bugle Corps
- Rehearsed for over 250 hours during June and July
- Performed in 12 states during July and August
- Placed 20th overall at Drum Corps International World Championships

Helpful Bot
- Wrote Discord bot using Node.js with Discord.js wrapper library
- Integrated with custom Wordpress plugin in PHP for configuring settings
- Managed chat permissions to check for vulnerabilities
- Sent reminders for team meetings automatically

Minesweeper Winner
- Included Java Swing GUI
- Scanned screen for Minesweeper tiles programmatically
- Cleared an average of 13 squares per second by automatically clicking

Temperature Detector Building
- Wrote custom seven-segment display driver for 8-digit common anode display on Arduino
- Calibrated NTC thermistor to Steinhart-Hart equation using hot water solution
- 3D-printed casing to protect and mount displays, wiring, status LEDs, and battery
- Obtained 0.1℃ average error and won gold medal at a Science Olympiad competition with 40 teams

Honors and Awards

- ICPC Southern California Regional Contest 13th Place (2022)
  - Algorithmic online judge programming competition
  - 50 three-person college teams from around Southern California
- Gold Medal in Cybersecurity at State Science Olympiad (2021)
  - Half computer security-emphasis online judge programming skills assessment
  - Half exam on ciphers, techniques, and protocols used by the internet
  - 200 two-person high school teams at regional level, narrowed to 30 at state level
- USNCO Honors (2020, 2021)
  - Top 150 of 16,000 individual high schoolers at local level, narrowed to 800 at national level
  - Multiple choice and free response chemistry exams
- AIME Qualifier (2020, 2021)
  - Top 5% of American Mathematics Competition exam participants nationwide