R. Davis Born

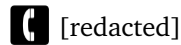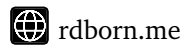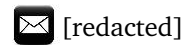📞 [redacted]　　✉ [redacted]
🌐 rdborn.me　　in linkedin.com/in/rdborn

TECHNICAL

Heliogen	*Senior Software Engineer (Controls)*	**2021 to Present**

- Design, implement, & test real-time feedback control in embedded C on ARM processors
- Configure & modify optimization-based multi-agent control systems for precision pointing assets
- Develop MQTT Remote Procedure Call services in C# & Python using Protocol Buffers
- Advise on guidance, navigation, & control of autonomous robotic platforms
- Formulate & analyze high-dimensional closed-chain kinematic models

NASA Jet Propulsion Laboratory	*Robotics Engineer*	**2018-21**

- Awarded for analysis of robotic control systems of the Perseverance Mars Rover
- Created custom MATLAB toolbox for controls analysis of sampling systems
- Supported validation & verification testing, troubleshooting, & data analysis
- Developed embedded software for all components of ROS2 research testbeds
- Conducted thermal trade studies and developed MATLAB data processing packages　*2014 internship*

SpaceX	*3× Engineering Intern*	**2015, 2016, 2017**

- Developed in embedded C++, Python, & LabVIEW for test & launch operations
- Organized & launched effort to restore Apollo-era 9-meter antennas to operation at Starbase

LEADERSHIP / TEACHING

Mentor & Committee Member	*Heliogen DE&I Council*	**2021 to Present**

- Coordinate with company leadership to advance recruitment & training initiatives
- Provide 1:1 career development guidance to entry-level employees

Founder & Co-president	*JPL Early Career Community*	**2019-21**

- Spearheaded strategic initiatives to bolster support & inclusion of new hires
- Organized community events online & in person for 10-70+ attendees

Teaching Assistant	*Stanford Semester at Sea*	**2017**
Advising Graduate Student	*Stanford Student Space Initiative*	**2015-18**
New Student Mentor	*Univ of Illinois at Urbana-Champaign*	**2013-15**

OTHER PROJECTS

Biologging Data Analysis	*Block Laboratory, Stanford*	**2018 to Present**

- Analyzed data from sensors deployed on marine animals to study behavior & kinematics

Control of High-altitude Balloons	*Multirobot Systems Laboratory, Stanford*	**2018**

- Published an algorithm that allows buoyancy-controlled robots to navigate a flow-field

Mechatronic Systems	*Smart Product Design Lab, Stanford*	**2016-17**

- Designed software & circuits for signal processing, logic, & actuation in integrated system

EDUCATION

MS	Mech Engr (Ctrl & Mechatronics)	*Stanford University*	**GPA** 3.88/4.00
BS	Mech Engr (Comp Sci minor)	*Univ of IL, Urbana-Champaign*	**GPA** 3.95/4.00

INTERNATIONAL

Stanford Global Engr Programs	*Chavín de Huantar, Peru – Archaeology field work*	**2017**
Univ of IL Campus Honors Program	*Island of Curaçao – Geology field research*	**2014**
Univ of New South Wales	*Sydney, Australia – Exchange program*	**2013**

AWARDS / CERTIFICATIONS / HOBBIES

UIUC Univ Honors · Stanford Engr Fellowship · Eagle Scout · NSFGRF Hon Mention · SCUBA · Jazz