

## Scott D. Odland

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### Education

#### NORTHWESTERN UNIVERSITY

Bachelor of Science in Mechanical Engineering, Concentration in Robotics, GPA: 3.50/4.00

Relevant Coursework: Electronics Design; Computer Aided Design; Fluid Dynamics; Thermodynamics, Mechatronics, Embedded Programming, Swarm and Multi-Robot Systems, Robotic Manipulation, Probabilistic Systems, Feedback Systems

Evanston, IL

June 2021

### Leadership and Activities

#### Northwestern University Robotics Club (NURC)

March 2020 – Current

##### *Workshop Chair*

- Designed an introductory course in robotics for new members of NURC
- Developed a curriculum to teach these students embedded programming, circuitry, PWM, CAD and motor control
- Maintain and advise club activities as a member of the NURC Exec Board

#### RoboBrawl

Jan. – March 2020

##### *Manufacturing Lead*

- Managed manufacturing for four five person teams to ensure battle-readiness by competition date.
- Programmed microcontroller in Arduino C++ to link a PS4 controller to the differential and weapon drive of battlebot.

#### Design Competition, Northwestern University

March – June 2019

##### *Team Member*

- Designed and built a semi-autonomous robot to detect/collect objects under a shroud.
- Devised, executed diagnostic tests for electrical components.
- Designed and built servo actuated gripping system

### Work Experience

#### Signode Industrial Group

Glenview, IL

##### *Electrical Engineering Intern – Robotics*

Jan. 2021 – Current

- Automated pick and place assembly line packing and palletizing
- Designed 3D printed fixtures for end effector of ABB robot arm to grip various objects
- Simulated assembly line and palletizing process in ABB's RobotStudio using RAPID programming

#### Interactive and Emergent Autonomy Lab

Evanston, IL

##### *Research Assistant*

Sep. 2020 - Current

- Helped with design and development of 10+ robots for Bayesian particle filter experiment
- Optimized IR detection and line following algorithms to create more consistent readings for target detection algorithm

#### Sibel Health

Niles, IL

##### *Hardware Engineering Intern*

June – Sep. 2020

- Performed and documented mechanical life cycle testing on chest and limb sensors for FDA approval
- Validated new temperature sensor in comparison with old one using a Bland-Altman plot
- Designed new custom battery pack for lithium polymer battery packaging

#### Segal Design Institute

Evanston, IL

##### *Shop Trainer*

Jan. – June 2020

- Trained undergraduate engineers to use the mill, lathe, waterjet, and horizontal/vertical band saw.
- Received CPR, first aid and AED certification and ensured student adherence to safety protocols

#### Grain Surfboards

Amagansett, NY

##### *Skateboard Workshop Instructor & Woodshop Crew Member*

June – Aug. 2018, June – Aug 2019

- Led workshops for custom built skateboards, hand-planes and bodyboards.
- Built for-sale furniture pieces/household items: benches, cutting boards, picture frames and mirrors.
- Drafted instruction manual for at-home construction of custom-built skateboards.

### Skills/Other/Interests

**Software:** SolidWorks, Git, OnShape, C, C++, Python, Excel, FEA analysis, Solid Edge, Eagle, MATLAB, NX, PID control, RAPID, GD&T, CoppeliaSim, Docker, HTML, CSS, UNIX, Object Oriented Programming (OOP)

**Machinery:** Manual and Conversational Mill; Water Jet; Laser Cutter; 3D Printer; Lathe; Band, Chop, and Table Saw; Router; Joiner

**Other Activities:** Club Lacrosse, Practice Goalie for Northwestern Women's Lacrosse, ZBT Risk Manager and Standards Director

**Interests:** Skateboarding, Snowboarding, Surfing, Painting