

# Frederick Wachter

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📄 fwachter.github.io



## Education

### Bachelor's and Master's of Science in Mechanical Engineering

Undergraduate GPA: 3.92 | Graduate GPA: 3.89 | *Focus in Controls & Systems*  
Drexel University | Philadelphia, Pennsylvania | *Currently a Junior*  
Anticipated Graduation: June 2018

## Engineering Work Experience

### Autonomous Systems Laboratory – Swiss Federal Institute of Technology **ETH** zürich

📍 Zürich, Switzerland 📅 March 2016 to September 2016

**Position:** Robotics and Development Engineer

- Developed ROS driver to interface with ABB YuMi robot from Linux
- Interfaced YuMi with the MoveIt! software and leap motion sensor in C++
- All work is public: [github.com/ethz-asl/yumi](https://github.com/ethz-asl/yumi)

### Production Technology West – University West

📍 Trollhättan, Sweden 📅 September 2014 to March 2015

**Position:** Research Engineer

- Developed algorithms to determine robustness of weld defect detection from an IR camera with various light sources
- Build a GUI in MATLAB to interface with algorithms



## Engineering and Leadership Experience

### Drexel Hyperloop Team – Steering Committee and Sponsorship Head

📍 Drexel University 📅 June 2015 to Present

- Developed organizational structure, grew team of over 100 students
- Interfaced between university advisors, university staff, and sponsors
- Raised over \$65,000 as sponsorship head

### THOR – Three Omni-Wheeled Robot

📍 Drexel University 📅 March 2015 to September 2015

- Developed controller for three omni-wheeled robot using an Arduino
- Used PID, interrupts, SMA, remote radio, and sensor feedback



## Honors and Awards

### Dean's List – Students who maintain above a 3.6 GPA for a semester

Drexel University | Fall 2013 to Present

### Pennoni Honors Program – Enhance co-curricular experience through unique experiences and courses

Drexel University | Fall 2013 to Present

### Paul Peck Scholar – Leadership, mentorship, and personal developed program with specialized courses

Drexel University | 2015 to Present

### Hess Honors Research Scholar – Research program for students in the top 10% of their class

Drexel University | 2015 to Present

## Extracurricular Activities

### Steering Committee Member and Sponsorship Head – Involved in determining team direction and facilitated sponsorships

Drexel Hyperloop Team | June 2015 to Present

### Member, Previous Vice Chair – Worked with the executive committee to plan events and tours of local companies

American Society of Mechanical Engineers (ASME) Drexel Chapter | Fall 2013 to Present

### Webmaster, Previous Lab Manager – Developed lab website and worked as lab manager for two semesters

Drexel Space Systems Laboratory (DSSL) | Spring 2015 to Present

[linkedin.com/in/frederickwachter](https://www.linkedin.com/in/frederickwachter)

[github.com/FWachter](https://github.com/FWachter)

## Skills

### Robotics

ROS (Robot Operating System)  
ABB Industrial Robots

### Programming

MATLAB (Proficient)  
HTML/CSS (Proficient)  
C++ (Working Proficiency)  
JavaScript (Working Proficiency)  
Java (Limited Working Proficiency)

### Languages

English (Native)  
French (Working Proficiency)

### Software

AutoCAD (Proficient)  
Creo Parametric (Proficient)  
SolidWorks (Proficient)

## Specialized Courses

### Graduate

Eng. Analysis & Methods I  
Aircraft Flight Dyn. & Control

### Undergraduate

Numerical Analysis I  
Computer Programming I  
Basic Robotic Simulation