

# Randall B.D. Schur

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## Engineering Experience

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**Robotic Research, LLC**, Gaithersburg, MD

August 2017 – present

*Software Engineer*

- Create new software modules for autonomous vehicle behavior
  - Modules include state machine, planning, motion execution, and vehicle interface
- Work with team of 10+ engineers to test and deploy software on large autonomous vehicle prototype system
  - Speeds 45 mph+, 26 ton vehicle, unmanned testing on lightly used public roads
  - Work with other teams to apply the same software to multiple other types of vehicle
- Manage small R&D (SBIR) programs on GPS-denied localization, efficient path planning for convoys

**Naval Research Laboratory**, Washington, D.C.

May 2015 – July 2016

*Graduate Student Intern – Exelis, TitanOneZero, NRL - Code 5545*

- Develop and program navigation algorithm for field test of multi-robot system
- Design components meeting size, weight, and power requirements for deployed systems
- System integration and prototyping tasks including mechanical, electrical, and programming
- Support experimental and field testing as mechanical design engineer

**The George Washington University**, Washington, D.C.

August 2014 – July 2016

*Graduate Research Assistant*

- Develop energy-focused navigation algorithms for autonomous vehicles to extend mission duration
- Perform MATLAB simulations to compare novel navigation approach to existing methods
- Design and build physical robotic platform to validate and test navigation algorithms

**ONExia, Inc.**, West Chester, PA

October 2013 – July 2014

*Applications Engineer*

- Served as technical resource for customers on machine concept development and component selection
- Proposed, evaluated and implemented solutions for customer-specific requirements
- Selected components for robotics and automation systems, including custom pick and place and vision solutions

## Education

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**The George Washington University**, Washington, D.C.

July 2014 – August 2016

Master of Science, Mechanical Engineering

*Thesis: Navigation Algorithms for Energy Harvesting Robots*

**The Pennsylvania State University**, University Park, PA

August 2009 – May 2013

Bachelor of Science, Mechanical Engineering

*Engineering Design Certificate*

## Technical Skills

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### Programming

C++, ROS, MATLAB, Python, Labview, Visual Basic, OpenCV/computer vision

Experience with Linux, Git, SVN, microcontrollers (Raspberry Pi, Arduino, BASIC Stamp)

### Design and Manufacturing

Machine shop operation and manufacturing processes– mill, lathe, water jet, laser cutter, rapid prototyper

SolidWorks (Certified SolidWorks Associate): modeling, FEA, drafting