William L. Spies II

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EDUCATION

Master of Science, Robotics

Northwestern University, Class of 2018 **GPA: 3.875**

Graduate coursework exposure and independent project focus:

- Robotic uses of **computer vision** (e.g. **visual odometry, visual SLAM**, camera calibration w/ **OpenCV**).
- Embedded systems programming with **C11, C++17,** and **Python**, with heavy leveraging of **ROS**.
- **Real-time kinematic control** of autonomous robotic systems utilizing **sensor fusion**.
- Applications of **machine learning** and **numerical optimization methods** for regression and classification.
- GPGPU programming with **CUDA**.
- Custom PCB design and fabrication, and advanced mechanical fabrication (laser cutting and 3D printing).

Bachelor of Science, Electrical Engineering

University of Cincinnati, Class of 2012 **Minor in Photonics**

TECHNICAL SKILLS

Python	**Linux (typ. Ubuntu)**	Wolfram Mathematica	Fanuc Robot HandlingTOOL
C11 / C++17	**Git**	PTC MathCAD	Fanuc Robot iRVision
ROS (Kinetic Kame)	**Visual Studio Code**	ePlan Electric P8	Rockwell RSLogix 5000
OpenCV		Altium Designer	Rockwell FactoryTalk
CUDA		Visio, Word, Excel, PowerPoint	

WORK EXPERIENCE

ATS Automation — Lewis Center, OH

Systems Project Engineer — **February 2017 – August 2017**

- Orchestrated team of 12 systems programmers with more than 100 collective years of PLC & HMI programming experience, while being the youngest engineer in the department.
- Established project task lists, designed high-level architecture for early-stage projects, assigned manpower resources, and coordinated with other engineering disciplines on a daily basis.
- Developed material and labor estimates (with scope up to 10,000 man-hours) for engineering sales, as requested.
- Designed and outfitted new vision lab for the development of new machine vision strategies for application purposes.

Systems Design Engineer — **September 2015 – February 2017**

Laser Safety Officer — **April 2016 – August 2017**

- Designed and validated system architecture, final machine control code, and human-machine interfaces as lead programmer for several projects.
- Programmed and validated Fanuc industrial robots in material handling and machine vision applications.
- Coordinated project schedules, task lists, and action items between project team members.
- Handled matters of safe laser integration, operation, and maintenance through authoring workspace policies and performing optical calculations relevant to Class 3/4 lasers.

Electrical Design Engineer — **June 2012 – September 2015**

- Designed, reviewed, and procured electrical power distribution, controls, sensing, and operator safety systems for custom-built automated industrial manufacturing systems.
- Served as technical lead engineer for multiple assembly systems with electrical budgets up to $2 million USD.