

Principal algorithm engineer, computer vision engineer, and mathematician with 15+ years' experience in solving real-world problems. For the past 7 years, I've specialized in computer vision and ML-driven object classification. I've lead both onsite and fully distributed remote teams. My experience includes SVM, Bayesian classification, fuzzy logic, data analysis, real-time systems, 3D computer vision, predictive algorithms, signal analysis, IIR filter design and theory, cybersecurity, medical devices, and gaming.

## Selected Experience

### Principal Algorithm Engineer

Global aerospace leader (confidential)

Nov. 2018 - current

**Principal engineer focused on creation of embedded software for threat analysis utilizing 3D voxel data from an X-ray scanner. Lead for EU development.**

Technologies utilized include Linux, C/C++, MatLab, sh, Ruby, and machine learning.

- Algorithm conception, analysis, design, and implementation, both individually and with team members
- 3D image processing:
  - Creating and improving image segmentation algorithms
  - Feature extraction
  - Improving image classification using various forms of machine learning
- Soft real-time embedded Linux system where correct classification is critical
- Creation of tools to improve understanding of existing data via visualization

### Senior Software Engineer

Bucher Emhart Glass

June 2014 - Nov. 2018

**Integral member of small team architecting and implementing complete redesign of system for next-generation glass-inspection technology.**

Technologies utilized include C#, .NET 4.5, MongoDB, Windows 8.1 Store Apps (Metro), WCF, Apache Thrift, C++, C.

- Image and Signal processing: IIR/FIR design, improvement of Canny, edge detection, vision fusion, object detection & location, embedded feature extraction, scene segmentation, OCR, contour generation with sub-pixel resolution, camera artifact correction
- Machine learning: Bayesian analysis and fuzzy logic
- Software design/implementation for hardware interface, process control, system monitoring
- Creation of MongoDB-backed image store for use with CI systems and customer on-site system

### Founder and Software Architect

SapioSpace, LLC

Sep. 2013 – Nov 2015

**Invented algorithm automating construction of IIR digital filters, and formed a small startup to patent and market the technology.**

- Created proof-of-concept software from personal mathematical research
- Wrote documentation for patent application
- Patent Application 14/542,795. "AUTOMATED CONSTRUCTION OF INFINITE IMPULSE RESPONSE FILTERS"

**Senior Software Development Engineer**

**Mandiant (now FireEye) Dec. 2009 - Sep. 2013**

**Served as lead, mentor, and software developer for leading cybersecurity company. Duties included prototyping, algorithm design, maintenance, and technology evaluation.**

Technologies utilized included JavaScript, Node.JS, MongoDB, MapReduce, Python, Postgres, Linux

Projects included:

- UI Team Lead for Mandiant Search Optimization (Nov 2010 - Sep 2013)
  - Fully remote lead for the distributed front-end UI team. Project was designed to handle 1 million endpoints.
- Developer for Mandiant Intelligent Response (Dec 2009 - Nov 2010)

**Details On Older Projects Available On Request.**

**Education**

Bachelor of Science, Mathematics, University of Washington