

# C. Carlo Fazioli

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I am an applied mathematician and software engineering generalist with experience in cloud computing and artificial intelligence. I am a lifelong learner confident in my ability to rapidly cultivate new knowledge, as well as drill down into conceptual details.

## Current Position

2018 – Present **Software Engineer**, *Group W, Inc.*, Vienna VA.

Presently, project manager and technical lead migrating a Kubernetes cloud application from a privately controlled compute cluster to Microsoft Azure.

- Managing client interactions, project timelines, and task progression
- Architecting the set of MS Azure cloud resources required by the application, including virtual networks, Kubernetes services, and Docker container registries
- Creating Azure Resource Manager templates to provision resources programmatically; Infrastructure as Code (IaC)
- Modernization of the application install process to use Helm charts and templates

Previously, main contributor on a 2021 MORS (Military Operations Research Society) Barchi-prize-winning, multi-year, multi-million dollar DARPA contract to develop an AI wargaming application. Responsibilities:

- Engineered a microservice application with Kubernetes/Docker on a private 11-node 1,240 CPU cluster
- Designed AI algorithms with NNs, MCTS, and RL
- Developed application source code with python, bash, Django, and GNU Make
- Constructed an application API to support front end Vue developers
- Managed GitLab issues, branches, merges, releases, and CI/CD pipelines for a team of 10
- Administrated multiple MongoDB instances (each 10GB-1TB) from the mongo shell, and with pymongo

## Education

2005 – 2009 **Ph.D. Mathematics**, *University of Illinois at Chicago*, Chicago IL.

2000 – 2004 **B.S. Mathematics**, *University of San Francisco*, San Francisco CA.

## Previous Positions

2016 – 2018 **Econometric Modeler**, *International Monetary Fund*, Washington DC.

Collaborated with IMF economists on economic model development; researched, designed, and implemented algorithms for use by IMF staff; pursued exploratory research into technology solutions for IMF institutional needs; addressed technical needs of individual IMF staff.

2013 – 2016 **Assistant Teaching Professor**, *Dept. of Mathematics*, Drexel University, Philadelphia, PA.

Developed course and lab materials; lectured, graded exams, monitored students' use of online resources, assigned final grades; assisted students as needed outside of class or in office hours; directed teaching assistants.

2011 – 2013 **Postdoctoral Research Associate**, *Dept. of Mathematical Sciences*, New Jersey Inst. of Tech., Newark, NJ.

Researched, designed, and coded novel algorithms for use in fluid dynamics simulations; briefed research supervisor; presented findings to collaborators and conference attendees.

## Hobbies and Interests

- Solving the NYT crossword puzzle daily
- Running, cycling, and yoga
- Cloud computing
- Science fiction lit/TV/movies
- Advent of Code and CTFs
- Bug bountying and cybersecurity