# Michael Trevor Giansiracusa

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## Summary

· Six years, three leadership roles – my career trajectory paints a clear picture of a driven leader with a talent for building and empowering teams. From mastering backend languages (Java, Python, Perl, Golang) and building data pipelines to spearheading innovative reprocessing efforts in data science and now leading a flourishing DevSecOps team, I consistently rise to the challenge, inspiring teamwork and delivering success across diverse technical landscapes.

## Education

**INDIANA UNIVERSITY OF PENNSYLVANIA**
**Bachelor of science | Graduation– Sept 2017**

· Major: **Computer Science** – Languages and Systems track
  · Accredited by the Computing Accreditation Commission of ABET
· Minor: **Mathematics**

**PIMA COMMUNITY COLLEGE**
**ASSOCIATES | MAY 2016 | TUCSON, AZ**

· Major: Electrical and Computer Engineering
· Minor: Mathematics

**Awards and recognition**

· Awarded **Barry Day Outstanding Computer Science Student Scholarship** 2016
· Received **Best in Class award** for COSC 300 – Assembly Language in 2016

## Experience

**DevSecOps Engineer and Team Lead (ORNL)**
**The Atmospheric Radiation Measurement Data Center**
**Oak Ridge National Laboratory| Sept 2022 – Current**

· POC for High Performance Computing (HPC) team
· Team Lead and Infrastructure Designer of DevSecOps team
  · Lead the effort to port 20-year-old legacy code and builds to modern DevOps standards
  · Lead architect of self-hosted GitLab pipelines and secure deployment strategies
  · Outreach coordinator for onboarding staff to DevOps principles and designs
· Lead maintainer and mentor for **production data retrievals** team
· Consultant and maintainer of containerized Jupyter Hub based Data Workbench deployed on local Kubernetes infrastructure
· Consult for reprocessing team and mentor leaders in that team

**Scientific Software Engineer (ORNL)**
**The Atmospheric Radiation Measurement Data Center**
**Oak Ridge National Laboratory| Sept 2018 – Sept 2022**

· Member of High Performance Computing (HPC) team
· Mentor and Lead Designer of Reprocessing team
  · **Operational data engineering** on instrument level data for quality assurance

- Lead architect of **automated reprocessing workflow**
- **GitLab** architect for reprocessing team
- **GitOps** developer for deployment on Virtual Machines (VMs)

- Developed **client-side automation** for ARMLive API
- Lead maintainer and mentor for **production data retrievals** team
- Lead developer of **Kafka** based **Twitter bot** for community outreach
- Manage system for reprocessing and client data delivery systems.

**Post Bachelors Research Associate (ORAU)**
**The Atmospheric Radiation Measurement Data Center**
**Oak Ridge National Laboratory| Sept 2017 – Aug 2018**

- Member of reprocessing team
  - **Operational data correction** on instrument level data for quality assurance
  - Contributed to the development of an **updated reprocessing workflow**
  - Created reprocessing toolbox to **standardize and automate** routine reprocessing tasks
- Contributed to **cluster level parallel processing** implementation Dask client
- Developed **client-side automation** for ARMLive API

**Higher Education Research Experiences (HERE) Intern**
**Oak Ridge National Laboratory| June 2017 – Aug 2017**

- Worked in a team on **web development**
- Used **machine learning**, **Python**, and **neural networks**
- Conducted research and development on two projects
  - **Error detection** algorithm for live sensor data
  - **Basket analysis** of user preferences for suggested products

**Air Force Research Lab Internship & Contractor**
**Air Force Research Lab - Information Directorate, Rome, NY | May 2016 – May 2017**

- Conduct research on **deep convolutional neural networks** using **CAFFE and TensorFlow**
- **Built and maintained a high-performance computing platform**
- **Co-Authored and published** four conference papers on image processing
- Worked with a team researching image processing and large scale data analytics

**Computer science department tutor**
**Indiana University of Pennsylvania | Jan 2016 – May 2017**

- **Tutored Computer Science students** in Java, MIPS, and X86 Assembly and Matlab

**Biological Science Technician**
**United States Department of Agriculture – Agriculture Research Service | July 2014 – Aug 2015**

- Worked in Dr. William Meikle's research lab
- Installed and maintained **solar-powered sensor systems with data loggers** for a honey bee research group
- Developed **novel robotic Arduino** based hive access **device**

## Skill and Expertise

**Languages**

- Proficient in: **Python, Go, Bash, GitLab**
- Familiar with: **Java, Rust, Scala, R, C, C++, MIPS assembly, CSS & Javascript, Julia, Perl**

#### SOFTWARE

- **Harbor, Kubernetes, CI/CD, HashiCorp Vault, Keycloak**
- **Microsoft Office Suite** including proficiency with Visio and PowerPoint
- Database: **MySQL, PostgreSQL, Cassandra, and Microsoft Access**
- Other: **Kafka, RabbitMQ, Elasticsearch, Logstash, Kibana, Filebeat, Docker, Kubernetes, Spark, Solr, CAFFE2, TensorFlow, ServiceNow**

#### LEADERSHIP

- **Team leader** with advancement in **Reprocessing** and **DevSecOps** teams
- **Team leader** for my position as a contractor with the Air Force Research Lab (Summer 2016 – Summer 2017)
- **Public Relations and Events Chair** for IUP **Association of Computer Machinery (ACM)** club (Spring 2016-2017)
- **Vice President** for IUP Computer Science Club (Fall 2015)
- Member of Xerocraft in Tucson, AZ. Worked on STEM projects with local high schools and community members, including welding, 3D printing, programming, and laser cutting (2013 – 2015)

#### COMMUNICATION

- Presented internship research to my department chiefs at the Air Force Research Lab
- Presented continuing research to the Director of the Air Force Research Lab at IUP Cyber Security Symposium
- Presented research for accepted papers and posters at various conferences
- Present update in staff meetings on tools developed and concepts learned from conference attendance
- Share research methods and results with fellow students during monthly presentations to the ACM club Publications

**Published & Presented**

- Lutz, A., Giansiracusa, M., Messer, N., Ezekiel, S., Blasch, E., & Alford, M. (2016, May). Optimal multi-focus Contourlet-based image fusion algorithm selection. In *SPIE Defense+ Security*. International Society for Optics and Photonics.
- Giansiracusa, M., Lutz, A., Messer, N., Ezekiel, S., Blasch, E., & Alford, M. (2016, May). Bandelet-based image fusion: a comparative study for multi-focus images. In *SPIE Defense+ Security*. International Society for Optics and Photonics.
- Giansiracusa, M., Lutz, A., Ezekiel, S., Alford, M., Blasch, E., Bubalo, A., & Thomas, M. (2016, May). Multi-focus and multi-modal fusion: a study of multi-resolution transforms. In *SPIE Defense+ Security*. International Society for Optics and Photonics.
- Giansiracusa, M., Lutz, A., Messer, N., Ezekiel, S., Alford, M., Blasch, E., & Manno, M. (2016, May). A comparative study of multi-focus image fusion validation metrics. In *SPIE Defense+ Security*. International Society for Optics and Photonics.
- Giansiracusa, M., Singerman, P., Ezekiel, S., Blasch, E., (2017, Apr, Anaheim, CA). Double-Density and Dual-Tree based methods for Image Super Resolution. In *SPIE Defense+ Security*. International Society for Optics and Photonics.
- Devarakonda, R., Giansiracusa, M., Kumar, J., & Shanafield, H. (2017, December). Social media based NPL system to find and retrieve ARM data: Concept paper. In 2017 IEEE International Conference on Big Data (Big Data) (pp. 4736-4737). IEEE.

**Published**

- Jackson, R.C., Sedlacek, A., Theisen, A., Collis, S.M., Grover, M.A., O'Brien, J.R., Sherman, Z., Schuman, E., Records, R., Parry, F. and Giansiracusa, M., 2024, January. Enabling Post-campaign Processing of Single Particle Soot Photometer (SP2) Data Using PySP2 and Dask. In *104th AMS Annual Meeting*. AMS.
- Giansiracusa, M., Lutz, A., Messer, N., Ezekiel, S., Blasch, E., & Alford, M. (2016, May). Bandelet-based image fusion: a comparative study for multi-focus images. In Geospatial Informatics, Fusion, and Motion Video Analytics VI (Vol. 9841, p. 98410F). International Society for Optics and Photonics.
- Giansiracusa, M., Lutz, A., Ezekiel, S., Alford, M., Blasch, E., Bubalo, A., & Thomas, M. (2016, May). Multi-focus and multi-modal fusion: a study of multi-resolution transforms. In Geospatial Informatics, Fusion, and Motion Video Analytics VI (Vol. 9841, p. 98410I). International Society for Optics and Photonics.
- Giansiracusa, M., Ezekiel, S., Raquepas, J., Blasch, E., & Thomas, M. (2016, October). A comparative study of multi-scale image super-resolution techniques. In 2016 IEEE Applied Imagery Pattern Recognition Workshop (AIPR) (pp. 1-7). IEEE.
- Ezekiel, S., & Giansiracusa, M. (2017, June). Matrix sketching for big data reduction (Conference Presentation). In Geospatial Informatics, Fusion, and Motion Video Analytics VII (Vol. 10199, p. 101990F). International Society for Optics and Photonics.
- Singerman, P., Blasch, E., Giansiracusa, M., & Ezekiel, S. (2017, June). General linear hypothesis test: a method for algorithm selection. In Geospatial Informatics, Fusion, and Motion Video Analytics VII (Vol. 10199, p. 101990E). International Society for Optics and Photonics.
- Devarakonda, R., Giansiracusa, M., & Kumar, J. (2018, December). Machine Learning and Social Media to Mine and Disseminate Big Scientific Data. In 2018 IEEE International Conference on Big Data (Big Data) (pp. 5312-5315). IEEE.
- Devarakonda, R., Guntupally, K., Crow, M. C., Darnell, W., Dumas, K. K., Robertson, S., ... & Giansiracusa, M. (2019, December). Modern, microservices based web-applications for accessing atmospheric data: ARM Data Center Example. In *AGU Fall Meeting Abstracts* (Vol. 2019, pp. IN31C-0807).
- Kumar, J., Crow, M. C., Devarakonda, R., Giansiracusa, M., Guntupally, K., Olatt, J. V., ... & Singh, A. (2019, December). Provenance–aware workflow for data quality management and improvement for large continuous scientific data streams. In *2019 IEEE International Conference on Big Data (Big Data)* (pp. 3260-3266). IEEE.