Michael J. Henry

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WORK EXPERIENCE

Pacific Northwest National Laboratory **2010 – Present**
Chief Data Scientist *Richland, WA / Remote*

- Joint Appointment with the Texas A&M University System
  - Manage the relationship between PNNL and the Texas A&M University System
  - Host mutual visits and connect researchers
- Subsector Lead for Defense Intelligence
  - Manage the relationship between PNNL and the US Defense Intelligence Community
  - Responsible for business development and stewarding the establishment of new programs, annual funding level exceeding 8 figures
- Served as Program Manager for two large (8 figures) deployed data analytics programs
  - Technical leadership and guidance for associated AI/ML, data science, and software engineering efforts
  - Resource management, external customer relationship management, and communication of strategic efforts to PNNL leadership
- Principle Investigator for a Mathematics of AI program
  - Steward technical development of 20+ research programs under the program
  - Mentor junior staff, establish broad research objectives, align program objectives with PNNL's strategic objectives
- Lead a Directorate research strategy on AI-enabled RF research
  - Influence internal research investments
  - Developed a strategy roadmap for business development activities with national security sponsors
- Technical lead / contributor on several deployed national security-oriented software engineering and data science projects
- Technical advisor for other large-scale data science programs
- Mentor to early/mid/senior scientists
- Experienced publisher and public speaker

Raytheon Virtual Technology Corporation **2008 – 2010**
Software Engineer *Alexandria, VA*

- Java and C++ developer in support of the Department of Defense

SAIC **2007**
Software Engineer *Alexandria, VA*

- Java developer in support of the Defense Threat Reduction Agency

Sonalysts, Inc **2006**
Software Engineer *Dahlgren, VA*

- Java developer in support of NAVSEA Dahlgren

TEACHING

Texas A&M - Commerce **Aug. 2021 – Present**
Adjunct Instructor *Bryan, TX*

- Courses Taught: Applied Data Analytics, Computer Architecture, Application Programming Development

Washington State University - Tri Cities **2018**
Adjunct Instructor *Richland, WA*

- Course Taught: Linux Programming Tools

EDUCATION

Indiana State University **May, 2024**
Master of Science, Applied Mathematics *Remote*
- Mathematics of Deep Learning, Representation Theory, Quiver Representations

Georgetown University **December, 2011**
Master of Science, Computer Science *Washington, D.C.*
- Thesis: *Identifying Vocal Regions in Music using the Discrete Wavelet Transformation*

Purdue University **May, 2006**
Bachelor of Science, Computer Engineering *West Lafayette, IN*
- Minor: Psychology

SKILLS & AWARDS

- **Skills:** Applied AI/ML research, big data analytics, mathematics of AI, operational AI, computer vision, natural language processing, cyber analytics, strategic development, multi-disciplinary team leadership, program management, full-scope polygraph holder, python, Java, C++, Linux, data science, communication
- **Awards**: 8x Outstanding Performance Award Recipient, Directorate Core Values Award Nominee, Directorate Project Team of the Year Recipient, 2x Patent Award

SELECT PUBLICATIONS

- **GLaM: Fine-Tuning Large Language Models for Domain Knowledge Graph Alignment via Neighborhood Partitioning and Generative Subgraph Encoding.** Proceedings of the AAAI Symposium Series. 2024
- **Evaluating the Efficacy of Generative Models.** Conference on Data Analytics (*invited speaker*). 2023
- **Evaluating Generative Networks using Gaussian Mixtures of Image Features.** Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision. 2023
- **Video Summarization Using Deep Action Recognition Features and Robust Principal Component Analysis.** Systemics, Cybernetics, and Informatics. 2020
- **Uncovering Biases in Off-the-shelf Natural Language Processing Tools.** Joint Statistical Meetings. 2020
- **Probing for Artifacts: Detecting ImageNet Model Evasions.** Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition. 2020
- **The Outer Product Structure of Neural Network Derivatives.** preprint. 2018
- **SenseAlert: A Real-time Group and Individual Health Tracking Application.** Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems. 2018
- **EpiEvident: Biosurveillance to Monitor, Compare, and Forecast Disease Case Counts.** Online Journal of Public Health Informatics. 2018
- **Understanding and Exploiting the Low-rank Structure of Deep Networks.** Workshop on Geometry in Machine Learning. 2018
- **Understanding Social Media's Take on Climate Change through Large-scale Analysis of Targeted Opinions and Emotions.** AAAI Spring Symposium Series. 2017
- **Multi-modal Geolocation Estimation Using Deep Neural Networks.** preprint. 2017