

Michael Doyle

AI RESEARCHER & ENGINEER

An AI researcher with a passion for language, open source, and applying research to important problems.

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EXPERIENCE

The MITRE Corporation

Lead AI Research Engineer

Jul 2018 - Present

Led multiple ML projects. Researched, developed, tested, trained, and deployed machine learning models and applications.

- Led research project on LLMs, IT Modernization, and code understanding
- Led research project on training object detectors for neuromorphic cameras
- Maintained internal GPU servers and services on OpenShift and Linux servers
- Developed and open sourced fire simulator to be used in RL training for wildfire mitigation
- Developed and open sourced LLM IT modernization library
- Developed agentic LLM backend prototype for government sponsor application
- Directly deployed trained models on government sponsor systems

Space Micro Inc.

Firmware Engineering Intern

May 2016 - May 2018

Wrote, simulated, synthesized, and implemented FPGA code in VHDL using ModelSim, Synplify Pro, Vivado, and Libero Designer. Designed PCBs in KiCAD and tested hardware.

SKILLS

MACHINE LEARNING NLP, LLMs, Computer Vision, Acoustics, RL, Simulation, Adversarial

LANGUAGES Python, Bash, SQL, LaTeX, Vue.js, JavaScript, CSS, MATLAB, VHDL

LIBRARIES NumPy, SciPy, PyTorch, TensorFlow, FastAPI, Typer, LangChain, Chroma, HuggingFace

TECHNOLOGIES Git, Docker, OpenShift, GitLab CI, GitHub Actions

PUBLICATIONS

Can LLMs Replace Humans During Code Chunking?

ArXiv

Jun 2025 |

Christopher Glasz, Emily Escamilla, Eric O. Scott, Anand Patel, Jacob Zimmer, Colin Diggs, **Michael Doyle**, Scott Rosen, Nitin Naik, Justin F. Brunelle, Samruddhi Thaker, Parthav Poudel, Arun Sridharan, Amit Madan, Doug Wendt, William Macke, Thomas Schill

Impact of Comments on LLM Comprehension of Legacy Code

ArXiv

Apr 2025 |

Rock Sabetto, Emily Escamilla, Devsh Agarwal, Sujay Kandwal, Justin F. Brunelle, Scott Rosen, Nitin Naik, Samruddhi Thaker, Eric O. Scott, Jacob Zimmer, Amit Madan, Arun Sridharan, Doug Wendt, **Michael Doyle**, Christopher Glasz, Jasper Phillips, William Macke, Colin Diggs, Michael Bartholf, Zachary Robin, Paul Ursino

Leveraging LLMs for Legacy Code Modernization: Challenges and Opportunities for LLM-Generated Documentation

ArXiv

Nov 2024 |

Colin Diggs, **Michael Doyle**, Amit Madan, Siggy Scott, Emily Escamilla, Jacob Zimmer, Naveed Nekoo, Paul Ursino, Michael Bartholf, Zachary Robin, Anand Patel, Chris Glasz, William Macke, Paul Kirk, Jasper Phillips, Arun Sridharan, Doug Wendt, Scott Rosen, Nitin Naik, Justin F. Brunelle, Samruddhi Thaker

Testing the Effect of Code Documentation on Large Language Model Code Understanding

North American Association for Computational Linguistics (NAACL)

Jun 2024 |

William Macke, **Michael Doyle**

Reinforcement Learning for Wildfire Mitigation in Simulated Disaster Environments

Neural Information Processing Systems (NeurIPS)

Nov 2023 |

Alexander Tapley, Marissa Dotter, **Michael Doyle**, Aidan Fennelly, Dhanuj Gandikota, Savanna Smith, Michael Threet, Tim Welsh

Practical Attacks on Machine Translation using Paraphrase

Association for Machine Translation in the Americas (AMTA)

Sep 2022 |

Elizabeth Merkhofer, John Henderson, Abigail Gertner, **Michael Doyle**, Lily Wong

The vulnerability of UAVs: an adversarial machine learning perspective

SPIE

Apr 2021 |

Michael Doyle, Josh Harguess, Keith Manville, Mikel Rodriguez