

Curriculum Vitae

1. **DATE:** 2 August 2022
2. **NAME:** DONOVAN, JORDAN, T.
3. **PRESENT TITLE:** COMPUTER SCIENTIST
4. **GRADE:** Senior
5. **ORGANIZATIONAL LOCATION:**
U.S. Army Engineer Research and Development Center
3909 Halls Ferry Road
Vicksburg, MS 39180
6. **EMAIL ADDRESS:** Jordan.t.donovan.cs@gmail.com
7. **TELEPHONE:** (office) 601-634-4624; (mobile) 601-988-3575
8. **WORK EXPERIENCE:**

U.S. Engineer Research and Development Center, Vicksburg, MS

2015 - Present

- Robotic Integrated Engineer Operations (RIENO)
Classification Team lead
2018 - Present
 - Develop machine learning algorithms (primarily CNNs) and visualization tools (metrics as well as layer activations)
 - Perform analysis and improve performance of classification algorithms using metrics and techniques from recent research
 - Identify and apply potential optimization techniques for classification algorithms (specifically for real-time classification)
 - Record techniques and results for publication and presentation
 - Present findings at professional venues
 - Provide neural network visualization expertise to data analytics and robotics teams (specifically NN node activations and optimized inputs)
 - Identify and optimize machine learning design (NN architectures and processes)
 - Train fellow employees in utilization of machine learning frameworks and standards
 - Facilitate business development workshops
- Co-lead of the Mobile Computing Team *2015 - 2021*

- o Develop mobile applications, application programming interfaces, websites, and databases for mobile applications
- o Oversee and direct team on mobile application design
- o Communicate with and adapt workflows of customer to mobile application
- o Manage contracts within team
- o Identify and remedy user connectivity and functionality for mobile applications

9. EDUCATION:

a. Universities attend, years attended, degrees obtained (with dates)

- University of Vermont (Current), Ph.D., Major: Computer Science GPA: 4.0
- Mississippi State University (December 2019), M.S., Major: Computer Science GPA: 3.7
- University of Mississippi (May 2015), B.S., Major: Computer Science GPA: 3.2

b. Other Training and Awards (with agency and year attended)

- Machine Learning for Everyone: May The Fourth Be with You! (Mark Tschopp, US Army Research Laboratory, 2023)
- Ludobots – Evolutionary Robotics Simulation (online by Dr. Josh Bongard, 2020)
- Data Science in Python (ITL, 2019) (Certificate received)
- CES Foundation (ITL, 2019)
- NVIDIA Deep Learning for Visualization (ITL, 2019) (Certificate Received)
- NVIDIA Deep Learning for Natural Language Processing (ITL, 2019) (Certificate Received)
- Introduction to Deep Learning (ITL, 2018)
- Introduction to TensorFlow (ITL, 2018)
- Introduction to Deep Reinforcement Learning (ITL, 2018)
- USACE CIO Information Management / Information Technology (IM/IT) Technical Support Team of the Year (ITL, 2018)
- Technical Writing (ITL, 2018)
- Technology Transfer (ITL, 2017)
- Dynamic Presentation Skills (ITL, 2017) (Certificate Received)
- FEMA Certificate of Appreciation for Hurricane Response Efforts (ITL 2017)
- Security + (ITL, 2016) (Certificate Received)
- Dept. of the Army Achievement Medal for Civilian Service (ITL 2016)
- Leadership Development Program – Myers-Briggs, Presentation Skills, StrengthsFinder, Emotional Intelligence, Situational Leadership, 7 Habits, Managing Multiple Priorities (2019 – present)

10. PROFESSIONAL OR TECHNICAL SOCIETIES/ORGANIZATIONS:

a. Graduate/Professional Memberships

- Association for Computing Machinery (ERDC)
- Association for Computing Machinery (SIGEVO)
- Autonomous Cyber Security Learning Group

b. Undergraduate Memberships

- Engineering Student Body
- Provost Scholar
- Engineering Scholar
- Mississippi Eminent Scholar Grant Recipient
- Agile Software Engineering Fellowship
- Honor Society Member

11. TECHNICAL PRESENTATIONS:

- "Poster: Unsupervised Pre-Training by Evolving Diverse Features", Student Research Conference. University of Vermont, Burlington, April 2023.
- "Unsupervised Pre-Training by Evolving Diverse Features", Neurobotics Laboratory Periodic Meet. University of Vermont, Virtual, February 2023.
- "Evolution of Diverse Feature Collectors", Neurobotics Laboratory Periodic Meet. University of Vermont, Virtual, November 2022.
- "Collective Intelligence for Deep Learning", Neurobotics Laboratory Periodic Meet. University of Vermont, Virtual, October 2022.
- "Brainiac+: Evolving Multiple Variables in a Neural Controller for a Quadruped" Evolutionary Robotics Periodic Meet. University of Vermont, Burlington, VT, May 2022
- "Evolutionary Selection Criteria and Performance in NAS-Bench-101" RD22 Channel 5 - Decision Making – Artificial Intelligence/Machine Learning B under Modernize our Nation's Infrastructure. Virtual, April 2022.
- "Open-Ended Evolution for Novel AI Models" Neurobotics Laboratory Periodic Meet. University of Vermont, Burlington, VT, April 2022.
- "Novel Feature Detectors in CNNs" Deep Learning Periodic Meet. University of Vermont, Burlington, VT, April 2022.
- "EfficientNet (V1 and V2)" Deep Learning Periodic Meet. University of Vermont, Burlington VT, April 2022.
- "EfficientNet (V1 and V2)" Neurobotics Laboratory Periodic Meet. University of Vermont, Burlington, VT, February 2022.
- "Latest Developments in Cellular Automata" Modeling Complex Systems Periodic Meet. University of Vermont, Burlington, VT, December 2021.

- "Evolutionary Selection Criteria and Performance in NAS-Bench-101" Evolutionary Computation Periodic Meet. University of Vermont, Burlington, VT, December 2021.
- "Real-time Material Segmentation for Robot Operations" RD20 Pecha Kucha-Style presentation. Virtual, October 2020.
- "Real-time Material Segmentation for Robot Operations" Data Science Workshop Poster Session. Virtual, August 2020.
- "FEMS data collection with MICA" ERDC HQ FEMS Demo. Vicksburg, MS, January, 2020.
- "Material Classification for Robotic Integrated Engineer Operations" ITL Symposium Poster Session. Vicksburg, MS, November, 2019.
- "CESAT Mobile Demo" Customer Visit and Technology Demo. Vicksburg, MS, October, 2019.
- "Understanding State-of-the-art Material Classification Through Deep Visualization" *Mississippi State University MS Thesis Defense*. Mississippi State, October 2019.
- "Real-time object and material classification for Robotic Integrated Engineer Operations" *Robotic Integrated Engineer Operations FY 19 Closeout*. Vicksburg, MS, September 2019.
- "Mobile Computing Impact and Growth" *Gains in Education of Math and Science II*. Vicksburg, MS, July 2019.
- "Impact of Mobile Computing in the DoD" *University of Louisiana at Monroe Tour*. Vicksburg, MS, March 2019.
- "Utility of Mobile Applications: Mobile Information Collection Application" *ERDC Tour for Great Lakes and Ohio River Division*. Vicksburg, MS, February 2019.
- "Mobile Computing Across ERDC" *Innovation Alley*. Vicksburg, MS, August 2018. (Need to find presentation and date)
- "Mobile Information Collection Application (MICA)" *Little Rock District Data Collection Info Session*. Little Rock, AR, June 2018.
- "Hurricane Relief Efforts: A Developer's Story" *Science, Technology, Engineering Workshop*. Vicksburg, MS, March 2018.
- "Utility of Mobile Applications: Blueroof Field Management System" *ERDC Executive Conference Room Briefing*. Vicksburg, MS, November 2017. (Need to finalize date)

12. PROGRAMMING LANGUAGES, SOFTWARE, AND OPERATING SYSTEMS:

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|--------------|------------------------|--------------|
| ● SQL | ● Microsoft SQL Server | ● Pytorch |
| ● C# | ● Management Studio | ● TensorFlow |
| ● Python | ● Visual Studio | ● Qt |
| ● R | ● IIS | ● XCode |
| ● HTML | ● Apache | ● Vim |
| ● Javascript | ● Jupyter Notebook | ● Git |
| ● Java | ● Caffe | ● Window OS |

- Linux OS
- Mac OSX

13. PROPOSALS:

- "Open-Ended Evolution for Novel AI Models" 6.1 Basic Research. Engineer Research and Development Center - Information Technology Laboratory. January 2022
- "Semi-Autonomous Methods for Novel Neural Network Designs" 6.1 Basic Research. Engineer Research and Development Center - Information Technology Laboratory. November 2022

14. PUBLICATIONS:

- Donovan, J. (2022). "Brainiac+: Evolving Multiple Variables within the Brain of a Quadruped" ERDC Library, RIENO.
- Donovan, J. (2022). "Innovations of Cellular Automata" ERDC Library, RIENO.
- Donovan, J. (2022). "Novelty and Discovery within Cellular Automata" ERDC Library, RIENO.
- Donovan, J. (2022). "Novel Feature Detectors in CNNs" ERDC Library, RIENO.
- Donovan, J. (2022). "Evolutionary Selection Criteria and Performance in NAS-Bench-101" ERDC Library, RIENO.
- Donovan, J. (2019). "Understanding State-of-the-art Material Classification Through Deep Visualization." MS Thesis
- Donovan, J. (2019). "Understanding State-of-the-art Material Classification Through Deep Visualization." *ERDC Library*, RIENO.
- Donovan, J. (2019). "Material Classification for Robotic Integrated Engineer Operations." ERDC Library, RIENO.
- Donovan, J., Pettitt, J. "Mobile Information Collection Application: User Manual" *ERDC Library*, MICA.
- Donovan, J., Pettitt, J. "Mobile Information Collection Application: Installation Manual" *ERDC Library*, MICA.

15. ADDITIONAL INFORMATION

- Github: <https://github.com/jdonovanCS>
- Webpage: <http://jordandonovan.com>
- LinkedIn: <https://www.linkedin.com/in/jordan-donovan-ab2083194>