Matthew R Conrad

Torrance, CA | 440-799-1778 | matthew.r.conrad1@gmail.com

Summary of Skills

- **Technical Expertise:** Proficient in **C**, **C++**, **Python**, Django, Shell/PowerShell scripting, and machine learning frameworks.
- **Networking/Security:** Skilled in routing/switching, information, physical, and cyber security compliance and operations.
- **System Architecture:** Expertise in designing, implementing, and securing complex, multi-platform systems.
- **Research/Analysis:** Published machine learning researcher with algorithm and statistical experience.

Experience

Principal Computer Systems Architect   **Northrop Grumman Corporation**   *Los Angeles, CA*   **7/2024 – Present**

- Completed upgrades **100+** Cisco enterprise switches and routers achieving **<1ms** downtime.
- Managed data center infrastructure using **multicast**, **vPC**, **HSRP**, and **Layer 3** switching and routing.
- Configured and deployed Voice-over-Internet Protocol (VoIP) servers and **120+** client devices to enable communications between multiple physical locations.
- Determined systems specifications, input/output processes, and working parameters for hardware and software systems.
- Implemented policies and procedures for securing software and hardware systems.
- Identified, analyzed, and resolved program support deficiencies by developing and recommending corrective actions.
- Researched and implemented cybersecurity hardening techniques and policies for Linux and Windows devices.
- Installed, configured, and deployed Red Hat Enterprise Linux servers.

Research Assistant   **University of Michigan**   *Ann Arbor, MI*   **10/2021 - Present**

- Second author on *Interpretability Gone Bad: The Role of Bounded Rationality in How Practitioners Understand Machine Learning* (https://doi.org/10.1145/3637354)
- Principal investigator of machine learning in the Computational Human-Computer Interaction Laboratory.
- Developed question-generation algorithms to provide explanations for machine learning models using Python.
- Conducted interviews regarding behavioral economic influence on the interpretation of machine learning models.
- Developed Qualtrics surveys and implemented a variety of survey flows and adaptive logic.
- Conducted analysis and testing of datasets used in machine learning interpretability research using Generative Additive Models (GAMs) and Shapley Additive Explanations (SHAP).
- Gained knowledge and experience in essential research processes including study design, survey development, interviewing, Institutional Review Board approval, manuscript writing, and publication.

Computer Consultant   **University of Michigan**   *Ann Arbor, MI*   **09/2021 - 08/2022**

- Provided on-site technical support for PC, Mac, and mobile device users.
- Ensured compliance with existing university regulations regarding computer and network security.
- Maintained up-to-date inventories of university assets.
- Conducted employee on-boarding training for 30 faculty and staff.

Information Technology Analyst   **Seifert Technologies Inc.**   *Massillon, OH*   **02/2021 - 06/2021**

- Provided on-site and remote technical support for Microsoft Office, Power BI, and Global Shop Solutions.
- Developed Microsoft Power BI analytical solutions with DAX for tracking inventory, shipping, billing, and time data.
- Performed server and data backup maintenance and verification.
- Prepared and issued quotes, purchase orders, sales orders, and invoices using QuickBooks.

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Active-Duty Marine	**United States Marine Corps**	*Various Locations*	**08/2012 - 01/2021**

- **Counterintelligence Agent/Assistant Operations Chief/Team Chief (2016-2021)**
  - Planned, coordinated, and executed the first Marine Corps **supply chain risk assessment** for the F-35 Lightning II.
  - Provided counterintelligence support to Marine Aircraft Group 12, Marine Corps Air Station, Iwakuni, Japan.
  - Conducted counterintelligence and human intelligence operations throughout the Indo-Pacific Theater.
  - Conducted counterintelligence surveys and inspections of III Marine Expeditionary Force assets in Okinawa, Japan.
  - Provided **46** security and counterintelligence training presentations for approximately **750** Marines and sailors in Iwakuni, Japan.
- **Cyber Network Operator (2012-2016)**
  - Implemented network architectures for a total of **5** remote operations centers in North Carolina, Ghana, and Gabon.
  - Administered the Secure Internet Protocol Routing (SIPR) Network and processed trouble calls and tickets for more than **1,500** users.

Education

Master of Science in Computer Science (Machine Learning)	**Georgia Institute of Technology**	*Atlanta, GA*	**In Progress**
Bachelor of Science in Computer Science (3.6 GPA)	**University of Michigan**	*Ann Arbor, MI*	**08/2021 – 05/2024**

Certifications

CompTIA Security+ (exp. 9/2025)   **CompTIA A+ (exp. 9/2025)**

Skills

- C | C++ | Python | Django | Object Oriented Programming | Algorithm Design | Computer Vision | Statistical Methods
- VoIP Management | Routing | Switching | Cyber Security | Linux | Red Hat Enterprise Linux | Server Management
- Leadership | Project Management | Team Building | Presentation | Communication | Problem Solving
- Counterintelligence/Human Intelligence Operations | Intelligence Operations Planning | Intelligence Reporting

Selected Works

Harmanpreet Kaur, **Matthew R. Conrad**, Davis Rule, Cliff Lampe, and Eric Gilbert. 2024. Interpretability Gone Bad: The Role of Bounded Rationality in How Practitioners Understand Machine Learning. Proc. ACM Hum.-Comput. Interact. 8, CSCW1, Article 77 (April 2024), 34 pages. https://doi.org/10.1145/3637354

Other

- **Security Clearance: TS/SCI** with CI-scope polygraph
- **Awards**: Navy and Marine Corps Commendation Medal (2020), Navy and Marine Corps Achievement Medal (2016, 2018)

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Personal Projects

- **Order Book:** A lightweight C++ implementation of an order book system supporting basic order types and matching logic. Designed to simulate core trading mechanisms like placing orders, cancelling them, and executing trades through matching buy/sell pairs. (**C++17**) (https://github.com/conradmr94/orderbook.git)

- **Trading Engine Server**: A skeleton of a stock trading engine server, written in C# using .NET. (**C#**, **.NET**) (https://github.com/conradmr94/TradingEngineServer)

- **Stock Portfolio Calculator:** A calculator app to generate buy lists and portfolio distributions given a target purchase volume. (**Python, Flask, Pandas, HTML, CSS**) (https://github.com/conradmr94/portfolio_calculator.git)