

JEREMY D. PRETTY

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PMP, PMI-ACP, PMI-SP, ISTQB-CTFL

RESEARCH SUMMARY

PhD-trained applied AI researcher specializing in artificial intelligence, machine learning, human-computer interaction, and human factors in high-stakes environments. Author of four peer-reviewed publications spanning satellite operations, automation, and laboratory safety systems.

Extensive experience designing and evaluating AI systems, including multi-agent architectures, computer vision pipelines, and NLP-driven analysis tools. Proven record of integrating research into production environments across gaming, federal systems, and startup platforms.

Doctoral Chair, Subject Matter Expert, and Peer Reviewer across multiple universities, with a strong focus on mentoring graduate and doctoral research. Combines rigorous academic research with real-world system development in AI-driven environments.

RESEARCH FOCUS

- Multi-agent systems and orchestration
- AI system reliability and evaluation
- Human oversight and autonomy tradeoffs
- Computer vision and NLP in production environments
- Human factors in high-stakes sociotechnical systems

EDUCATION

- PhD, Product Management, Capitol Technology University
- MS, Artificial Intelligence and Machine Learning, Colorado State University Global
- MS, Project Management, Embry-Riddle Aeronautical University
- MBA, East Texas A&M University

RESEARCH AND SCHOLARLY ACTIVITY

Publications

- Heinrich, D., McAndrew, I., Pretty, J. "Human Factors Considerations in Satellite Operations..." International Journal of Managing Information Technology, 2021
- Chen, K., Pretty, J. "Selection of Influential Factors on Fume Hood Containment Performance..." The Chemist, 2022
- Heinrich, D., McAndrew, I., Pretty, J. "Attention, Concentration, and Fatigue in Space Operations..." IJATL, 2022
- Heinrich, D., McAndrew, I., Pretty, J. "Automation, Alarm Management, and Human-Computer Interaction..." IJATL, 2023

ACADEMIC AND RESEARCH APPOINTMENTS

Capitol Technology University

Adjunct Professor and Doctoral Chair | 2020 to Present

- Serve as Doctoral Chair and committee member for PhD candidates in product management and technology leadership
- Design and instruct graduate courses in product management, analytics, and AI-enabled systems

Grand Canyon University

Adjunct Professor, College of Engineering and Technology | 2024 to Present

- Teach artificial intelligence, machine learning, computer vision, and advanced statistics
- Serve as Subject Matter Expert across multiple AI and game development courses
- Conduct peer review for reinforcement learning, feature extraction, and game security courses

University of Arizona Global Campus

Adjunct Professor | 2024 to Present

- Teach project management, risk, cost and schedule control, and planning

Southern New Hampshire University

Adjunct Professor, Quantitative Studies and Operations | 2022 to Present

- Teach graduate and undergraduate courses in project management and operations
- Recipient, Distinguished Online Teaching Award, 2025
- Recipient, Outstanding Educator Award, 2024 and 2025

SELECTED AI PROJECTS

- Multi-Agent AI Operating System, designed agent orchestration workflows with governance, approval logic, memory, and safety constraints for operational and engineering use cases
- Visual Anomaly Detection in Game Environments, built OpenCV and TensorFlow pipelines for real-time graphics validation and automated issue documentation
- NLP Bug Triage System, developed context-aware bug classification and prioritization workflows using Python and NLTK, improving triage accuracy by 75 percent
- Adaptive Game AI Systems, led AI and ML work on procedural generation, behavioral modeling, adaptive difficulty, narrative response, and autonomous testing agents

RESEARCH AND TECHNICAL LEADERSHIP EXPERIENCE

TMFPRETTY, LLC

Founder and Chief Research Architect | 2024 to Present

- Architected a multi-agent AI operating system with structured governance, workflow routing, approval logic, and safety constraints

- Designed and led AI and ML pipelines for simulation-driven systems including procedural generation, adaptive difficulty, and behavioral modeling
- Developed real-time computer vision systems for anomaly detection and automated validation workflows
- Built AI-driven systems including narrative response engines and autonomous testing agents
- Engineered large-scale system architecture spanning 265 plus runtime scripts and 34 custom development tools
- Designed enterprise SaaS research platform integrating project analytics, QA traceability, and compliance-focused reporting

Blizzard Entertainment, Austin, TX

Project Manager and Senior Test Lead, AI and Data Science Focus | 2021 to 2024

- Developed NLP-based classification system using Python and NLTK for automated bug triage, improving accuracy by 75 percent and eliminating significant manual effort
- Built computer vision anomaly detection system using OpenCV and TensorFlow for real-time graphical validation
- Led cross-functional efforts across graphics, performance, online systems, and data science teams
- Established data-driven evaluation frameworks to analyze system behavior and improve quality outcomes

Air Force Civil Service, Randolph AFB, TX

Senior Technical Program Manager, Research and Systems Migration | 2019 to 2021

- Led research-driven migration of mission-critical systems to AWS GovCloud environments
- Implemented optimization strategies resulting in over 500 thousand dollars in annual savings
- Served as Alternate Contracting Officer Representative for a 38 million dollar contract

Additional Technical and Research Roles

- Senior Project Manager, CDO Technologies
- Program Manager, P3I Inc., Air Force Electronic Key Management System
- Systems Test Engineer and Scrum Master, Northrop Grumman
- Associate Program Manager, United States Air Force

RESEARCH SKILLS

- Artificial Intelligence and Machine Learning: TensorFlow, OpenCV, NLTK, Python
- Systems Research: Multi-agent systems, real-time AI pipelines, anomaly detection
- Research Methods: Human factors analysis, fuzzy evaluation, statistical modeling, experimental design
- Technical Systems: Unity development, AI-driven simulation systems, data analysis pipelines
- Academic: Doctoral supervision, peer review, AI curriculum development

GAMING AND AI SYSTEM CONTRIBUTIONS

- Diablo IV
- Overwatch 2
- World of Warcraft: Dragonflight
- World of Warcraft: Wrath of the Lich King Classic

AI and quality engineering contributions supporting large-scale production systems at Blizzard Entertainment