JINGAN PENG

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EDUCATION

University of Oklahoma, Norman, OK
Ph.D. in Industrial & Systems Engineering *August 2024 - Present*

- GPA: 4.0/4.0
- Advisor: Dr. Ziho Kang
- Focus on: Human Factors & Ergonomics, Neuroergonomics, Eye-tracking, Data Mining, and Virtual Reality

University of Oklahoma, Norman, OK
Data Analytics, Graduate Certificate *January 2025 - Present*

- GPA: 4.0/4.0
- Notable Courses: Intelligent Data Analytics, Artificial Intelligence, Fundamentals of Engineering Statistical Analysis

University of Virginia, Charlottesville, VA
M.Eng. in Systems Engineering *September 2022 - December 2023*

- GPA: 3.9/4.0
- Focused on: UX, UI, and user experience design, with coursework covering HCI, Human Factors, and Systems Analysis & Design.

Anhui University of Science and Technology (AUST), Huainan, China
B.Eng. in Ammunition Engineering and Explosion Technology *September 2018 - June 2022*

- Junior/senior year GPA: 3.8/4.0

TECHNICAL SKILLS

Programming languages: R, Python, MATLAB

Machine learning: R (caret, forecast, train), Python (scikit-learn, gurobi, gymnasium)

Other Tools: Figma, Arena, SAS, PTV Vistro, Origin

WORK EXPERIENCE

Human Factors & Simulation Laboratory at University of Oklahoma, Norman, OK
Research Assistant *March 2024 - Present*

- Deeply involved in multiple human factors research projects, including VR-based cognitive experiments and driving simulation studies.
- Responsible for processing and analyzing functional near-infrared spectroscopy (fNIRS), eye-tracking, and behavioral data using Python, R, and MATLAB, including cleaning, preprocessing, modeling, and visualization.
- Writing research reports and academic manuscripts for conference and journal submission.

School of Industrial and Systems Engineering at University of Oklahoma, Norman, OK
Teaching Assistant *August 2024 - Present*

- Assisted in teaching undergraduate and graduate courses, including Ergonomics in Systems Design, Systems Analysis Using Simulation, and Data-Driven Decision Making.
- Supported classroom instruction, led lab sessions, and guided semester projects, including experimental design, data analysis, and simulation modeling.
- Graded assignments, provided feedback, and helped students understand applications of human factors principles and data-driven decision tools.

iFLYTEK Co., Ltd, Hefei, China
Junior Technical Support Engineer Intern *July 2021 - September 2021*

- Analyzed behavior and feedback data from 1,000+ users, identifying key usability pain points and contributing to design improvements in intelligent education platforms.
- Maintained and optimized user databases using Navicat and Fiddler to support large-scale data integration.
- Assisted in product and user interface evaluations.

PROJECTS

Human Engagement Exploring in Multi-Person Virtual Reality (VR), Norman, OK *August 2024 - Present*

- Conducted multi-person VR experiments to collect biometric (fNIRS, eye-tracking) and behavioral data for assessing learning engagement and assessment in virtual environments.
- Contributed to developing the immersive VR experiment scenarios using Vizard and Godot platforms.
- Led end-to-end fNIRS data analysis, including preprocessing, filtering, and motion artifact correction. **Identified** significant infrared interference from VR headsets and **developed** a data-driven filtering approach that effectively resolved the issue.
  -One first-author paper published; several follow-up manuscripts are in progress.

Human Factors Study on Automated Cruise Control (ACC) Simulation | Project Lead, Norman, OK *March 2024 - Present*

- Modeled ACC behavior using MATLAB and designed scenarios simulating emergency braking and congested traffic conditions.
- Introduced human-perception-based metrics to connect simulation data with driver experience.
- Demonstrated that electric vehicles offer smoother and safer control, providing new insight into human trust and comfort in automation. - First-author manuscript currently under review.

Optimization of Ebenefits/VA.gov Website Login Process, Charlottesville, VA *March 2023 - May 2023*

- Contributed to the design and formulation of a probabilistic model analyzing login failures on the Ebenefits/VA.gov website.
- Implemented and refined model algorithms to ensure computational accuracy and reliability.
- Collaborated to demonstrate the effectiveness of the Defense Self-Service Logon Path in enhancing login success rates.

User Experience Design Projects with Industry Partners, Charlottesville, VA *January 2023 - May 2023*

- **MITRE Future Landscape Ideator** – Proposed the graph-database approach and designed an interface that helps MITRE analysts explore 70,000+ trends and reveal strategic patterns more clearly and efficiently.
- **Reconstruction Education Platform** – Applied a space-themed, child-friendly design system to enhance engagement, clarity, and usability for young learners on Reconstruction's education platform.
- **UVA Health Medical Scheduling App** – Redesigned UVA Health's medical scheduling app to replace their manual paper system with a digital interface featuring real-time updates, customizable views, and intuitive navigation for busy clinicians.

National College Student Innovation Project | Project Lead, Huainan, China *September 2019 - May 2021*

- Led a five-member research team focused on optimizing the structure and materials of a new explosive formulation, and identified that graphite coating enhances both its physical and chemical stability.
- Analyzed and visualized the thermal decomposition process using a differential scanning calorimeter and an electron microscope.
- Earned an "excellent" evaluation for the project presentation and secured ¥20,000 in research funding.

PUBLICATIONS

- Peng, J., Kang, Z., Lee, J., & Fraga, R. P. (2025, May). Evaluation of Brain Signal Quality in Virtual Reality: Detection of Infrared Signal Interference Using the fNIRS Device. In 2025 6th International Conference on Bio-engineering for Smart Technologies (BioSMART) (pp. 1-4). IEEE.
- Camacho, G., Bolton, M., Peng, J., Wagle, P., & Feng, L. (2023). A Formal Method for the Analysis of the Veteran's Ebenefits' Website. Human Factors in Software and Systems Engineering, 94(94).

AWARDS

- Thomas I. Brown, Jr. Endowed Scholarship, Gallogly College of Engineering 2025
- Ph.D. Recruitment Excellence Fellowship , Gallogly College of Engineering 2024
- Excellent Student Award & Student Scholarship, Anhui University of Science and Technology 2019, 2020, 2021
- Bronze Award, the 6th Internet + College Student Innovation and Entrepreneurship Competition 2020