# Joey Paul E. Haynes

github.com/jpthefish

jp.haynes@utexas.edu

+1 (405) 201-5801

August 2024 - Present

Graduation: May 2026

January 2021 - June 2024

Graduation: June 2024

Education

University of Texas at Austin, Austin, TX

Master of Science (M.S.) in Computer Science

Coursework: Planning, Search, and Reasoning Under Uncertainty

Cumulative GPA: 4.00/4.00

Southern New Hampshire University, Manchester, NH

Bachelor of Science (B.S.) with Honors

Major in Computer Science, Minor in Applied Mathematics

Cumulative GPA: 4.00/4.00

Conference Proceedings **J. P. Haynes**, M. J. Bhalerao, W. T. Honeycutt, J. K. Allen, and F. Mistree. *Predictive Modeling for Public Policy Design: The Impact of Artificial Lights at Night (ALAN) on Bird Strikes*. ASME Computers and Information in Engineering Conference, DETC24-143780, Washington, D.C., August 2024

Journal Articles **J. P. Haynes**, M. J. Bhalerao, W. T. Honeycutt, J. K. Allen, and F. Mistree. *Predicting Bird Strike Occurrences through a Model-Based Cyber-Physical-Social System Design*. [Under Review]. Submitted to ASME Journal of Computing and Information Science in Engineering (JCISE)

Invited Talks

Predictive Modeling for Public Policy Design: The Impact of Artificial Lights at Night (ALAN) on Bird Strikes. 42nd ASME/AIAA Regional Symposium, Oral Roberts University, Tulsa, OK, April 2024

Predicting Bird Strike Occurrences through a Model-Based Cyber-Physical-Social System Design. Webinar given to the SRL@OU Conversations Series, April 2024

Oral Presentations Predictive Modeling for Public Policy Design: The Impact of Artificial Lights at Night (ALAN) on Bird Strikes. International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, Washington, D.C., August 2024 (IDETC '24)

Adaptive Manufacturing Systems: Leveraging Predictive Modeling and Cyber-Physical-Social Systems for Real-Time Adaptation. International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, Washington, D.C., August 2024 (IDETC '24)

Experience

Systems Realization Laboratory at OU, Norman, OK

August 2023-Present
Remote Research Intern advised by Dr. Janet K. Allen and Dr. Farrokh Mistree at the University of
Oklahoma

- Collaborated in a team of researchers as lead author for the ALAN project, investigating the impact of artificial lights at night (ALAN) on bird strike occurrences
- Helped define the research problem by identifying knowledge gaps in the existing work, illustrating a method of predictive modeling informed by cyber-physical-social systems (CPSS)
- Conducted exploratory data analysis (EDA) using GIS tools, integrating data including the FAA wildlife strike database, BirdCast migration forecasts, and light pollution rasters
- $\bullet$  Developed a spatiotemporal predictive model using decision tree regression with GIS data, achieving an R-squared value of 0.78
- Applied k-fold cross-validation and hyperparameter tuning to optimize model performance, achieving an average absolute error of 0.95 strikes
- Winner of the NSF/ASME student design essay contest for an essay on adaptive manufacturing systems using predictive modeling and cyber-physical-social systems (CPSS)
- Authored 2 first-author publications (IDETC, JCISE) and presented 4 technical presentations as part of my work in this lab

Walmart, Yukon, OK

June 2020 - Present

Associate

• Balanced a customer-facing role throughout undergraduate studies, developing strong time management and leadership skills

- Trained and mentored over 20 employees, enhancing team efficiency and communication
- $\bullet$  Managed merchandise presentation and facility maintenance, contributing to a 5.5% YoY sales increase in a \$100M/year facility

# Projects Design Messaging Platform — jpthefish.com

December 2022 - Present

Website for collaborating, sharing, and discovering research interests

- Deployed a full-stack web application with daily traffic using React.js, Firebase, and SQL
- Created a messaging platform with sign-in authentication, back-end security logic, and word filtering
- Designed and implemented a responsive UX design with careful attention to visual accessibility

#### Grazioso Salvare Analytics Dashboard with Dr. Sherri Maciosek

February 2023

- Developed an analytics dashboard for an Austin-based rescue-animal company as a coursework project, using Python, MongoDB, and the Dash framework
- Implemented interactive data visualization components, including tables, charts, and geolocation maps, enabling stakeholders to filter and analyze animal shelter data by relevant criteria

Honors and Awards NSF/ASME Student Design Essay Competition Award – \$1,500 June 2024 Graduation with Honors and Distinction at SNHU (Summa Cum Laude) June 2024 Alpha Sigma Lambda December 2023

Service and Leadership Roles Member, National Society of Leadership and Success (NSLS)

Lab Volunteer, Systems Realization Laboratory at OU

Training Supervisor, Walmart Supercenter

Volunteer Contributor, Wikimedia Foundation

May 2020 - January 2022

Technical Skills Languages: Python, SQL, R, Java, C/C++, MATLAB, JavaScript Data technology: PostgreSQL, MySQL, MongoDB, Firebase/Firestore Tools and frameworks: Git, AWS, Docker, OpenGL, React, Tableau

Certifications

Google Advanced Data Analytics Certificate, Coursera Inc.
People and Business Leadership Certificate, Bellevue University

December 2023 March 2021

Languages and Other Skills Intermediate Spanish (B1) and French (B2) Language Fluency Classical and Jazz Piano

References

## Dr. Farrokh Mistree

Professor and L.A. Comp Chair at OU, Email: farrokh.mistree@ou.edu, Tel: (404) 502-9086

### Dr. Janet K. Allen

Professor and John and Mary Moore Chair at OU, Email: janet.allen@ou.edu, Tel: (405) 550-3969

#### Dr. Sherri Maciosek

Adjunct Professor at SNHU, Email: s.maciosek@snhu.edu, Tel: (715) 479-3408