

# EMANUELE BOSSI

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## EDUCATION

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### Embry-Riddle Aeronautical University

Prescott, AZ

B.S., Software Engineering

Expected May 2026

Minor: Mathematics

Undergraduate Research Scholar

GPA: 4.0/4.0

### Embry-Riddle Aeronautical University

Prescott, AZ

B.S., Data Science

Expected May 2026

Minor: Mathematics

Undergraduate Research Scholar

GPA: 4.0/4.0

## RESEARCH EXPERIENCE

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### Embry-Riddle Aeronautical University

Prescott, AZ

*Undergraduate Researcher, Undergraduate Research Institute*

August 2024 – Present

#### Measuring Human Trust in AI in Safety-Critical Systems

*Department of Aerospace Engineering*

*Advisor: Hadi Ali*

- Conducting research on human trust in AI in safety-critical systems, focusing on transparency, control, and error rates
- Developing an experimental study to assess AI's impact on decision-making in aviation safety
- Funded by Embry-Riddle Aeronautical University CBSI Philanthropy Council

#### AI-Driven Optimization of the Actual Take-Off Weight (ATOW)

*Department of Mathematics*

*Advisor: Abd AlRahman Rasheed AlMomani*

- Developing AI-driven models to optimize aircraft take-off weight for improved fuel efficiency and reduced emissions
- Implementing machine learning techniques for predictive analysis and operational optimization
- Ranked in the top 25 out of 132 teams at the PRC Data Challenge organized by EUROCONTROL
- Funded by Embry-Riddle Aeronautical University Undergraduate Research Institute

#### Automated Jetways

*College of Engineering and School of Business*

*Advisors: Elliott Bryner and Jules O Yimga*

- Analyzing automation potential for jetways to improve boarding efficiency and safety
- Evaluating business and engineering factors, including airframe compatibility, automation technologies, and cost estimation
- Funded by Boeing

### **AI-Based Phishing Countermeasures**

*Department of Computer, Electrical, and Software Engineering*

*Advisor: Sameer Abufardeh*

- Conducting a public awareness survey to analyze people's understanding of phishing and its risks
- Training machine learning models on historical and contemporary phishing datasets to evaluate their adaptability to modern threats
- Presented at the National Conference on Undergraduate Research (NCUR) 2025
- Funded by Embry-Riddle Aeronautical University CBSI Philanthropy Council

### **Dimensionality Reduction in Sentiment Analysis**

*Department of Mathematics*

*Advisor: Faisal Ahmed*

- Investigating the impact of feature extraction and dimensionality reduction on sentiment analysis performance
- Implementing Bag of Words, TF-IDF, and Chi-Square techniques to optimize machine learning models
- Achieved performance comparable to BERT with reduced training and inference times
- Published in Lecture Notes in Networks and Systems; presented at the Intelligent Systems Conference (IntelliSys) 2025
- Funded by Embry-Riddle Aeronautical University, College of Arts & Sciences

## **TEACHING EXPERIENCE**

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### **Embry-Riddle Aeronautical University**

Prescott, AZ

*Teaching Assistant, Software Engineering Practices*

January 2025 - Present

- Developed interactive quizzes to assess students' understanding of the course material, assisting students with the semester-long project and graded project's milestones

### **Embry-Riddle Aeronautical University**

Prescott, AZ

*Teaching Assistant, Machine Learning & Big Data Analysis*

August 2024 - Present

- Developed new 400-level machine learning course structure (lectures, quizzes, and exams), hosted review sessions, graded assignment and presented material to 120 students across 4 sections

### **West Virginia University Institute of Technology**

Beckley, WV

*Teaching Assistant, Computer Science*

January 2023 – July 2023

- Developed course material and taught middle school students Computer Science core concepts covering various topics such as problem solving, web developing and machine learning

## **PUBLICATIONS**

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- Bossi, E., Ahmed, F. “Enhancing Sentiment Analysis with Feature Extraction and Dimensionality Reduction in Traditional Machine Learning Models”, Lecture Notes in Networks and Systems, 2025.

## **PRESENTATIONS**

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- "Dimensionality Reduction: A Key to Optimizing Sentiment Analysis Models," Intelligent Systems Conference (IntelliSys). Oral Presentation. Amsterdam, NL, August 2025.
- "Phishing in the Digital Age: Surveying Public Awareness and Leveraging AI for Defense," National Conference on Undergraduate Research (NCUR). Oral Presentation. Pittsburgh, PA, April 2025.
- "Measuring Human Trust in AI in Safety Critical Systems," Embry-Riddle Discovery Day. Poster Presentation. Prescott, AZ, April 2024.
- "AI-Driven Optimization of the Actual Takeoff Weight (ATOW)," Embry-Riddle Discovery Day. Poster Presentation. Prescott, AZ, April 2024.
- "AI-Based Phishing Countermeasures," Embry-Riddle Discovery Day. Poster Presentation. Prescott, AZ, April 2024.
- "AI-Driven Optimization of the Actual Takeoff Weight (ATOW)," Prescott Regional SciTech Fest. Poster Presentation. Prescott, AZ, March 2024.
- "Measuring Human Trust in AI in Safety Critical Systems," Embry-Riddle Career Fair Research Symposium. Poster Presentation. Prescott, AZ, February 2024.
- "AI-Driven Optimization of the Actual Takeoff Weight (ATOW)," Embry-Riddle Career Fair Research Symposium. Poster Presentation. Prescott, AZ, February 2024.
- "AI-Based Phishing Countermeasures," Embry-Riddle Career Fair Research Symposium. Poster Presentation. Prescott, AZ, October 2024.

## **HONORS & AWARDS**

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Invent for the Planet 2025 – Engineering Challenge Winner	2025
Department of Computer Science Outstanding Student Award	2023

## **GRANTS & FELLOWSHIPS**

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Embry-Riddle Undergraduate Research Institute Eagle Prize Award (\$6,000)	2024-2025
Embry-Riddle CBSI Philanthropy Council Award (\$8,900)	2023-2025
Embry-Riddle Transfer Scholarship Award (\$30,000)	2023-2026
Embry-Riddle Soccer Athletic Grant (\$60,000)	2023-2026

## **LEADERSHIP & OUTREACH**

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Undergraduate Research Team Leader	2024-2026
Embry-Riddle Aeronautical University Men’s Soccer Varsity Captain	2025-2026

## PROFESSIONAL AFFILIATIONS

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Tau Beta Pi Engineering Honor Society	2024 - Present
Phi Kappa Phi Honor Society	2024 - Present
National Society of Leadership and Success Honor Society	2024 - Present

## PROFESSIONAL EXPERIENCE

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### True Course Simulations

Prescott, AZ

*Data Scientist Intern*

May 2024 – August 2024

- Developed machine learning models to optimize pilot training flight simulations, reducing data retrieval times by 70%
- Analyzed large datasets using Python and MySQL to extract actionable insights, improving decision-making efficiency
- Collaborated with cross-functional teams to design a predictive model for pilot aptitude, increasing program completion rates by 35%

### Jointek Srl

Somma Lombardo, IT

*Data Scientist Intern*

May 2023 – August 2023

- Processed and analyzed historical sales and procurement data using SQL and Python, enhancing data retrieval efficiency by 30%
- Designed predictive analytics models for business operations, improving decision making
- Created visual reports and dashboards in MS Power BI, improving stakeholder engagement and seniority business awareness