Ideal Rafuna

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Education

University of Illinois Urbana-Champaign (UIUC)　　　　　　　　　　　December 2024
Master of Science: **Aerospace Engineering**
Urbana Champaign
Accelerated non-thesis program focused on systems integration and technology management

Clarkson University　　　　　　　　　　　　　　　　　　　　　　　　May 2023
Bachelor of Science: **Mechanical and Aerospace Engineering, Minor in Mathematics**
NY
• Minor in Mathematics
• Inducted into *Sigma Gamma Tau* Aerospace Honor Society

Experience

University for Business and Technology　　　　　　　　　　October 2025 to Current
Lecturer, Teaching Assistant & Aerospace Laboratory
Prishtina, Kosovo
- 1. Designed and delivered influential lectures in Computer Science I and Introduction to Mechatronics.
- 2. Developed lab modules and supervised projects as a TA for Embedded Systems I.
- 3. Supervise the **Aerospace Laboratory**, a specialized division within the Mechatronics Lab, focusing on **UAV design, systems integration, and control research**
- 4. Founded DBF Kosovo, pioneering the first AIAA Design-Build-Fly team in the Balkans.
- 5. Mentored interdisciplinary research teams in robotics, automation, and control systems.

UBT Labs　　　　　　　　　　　　　　　　　　　　　　September 2025 to Current
TelloTwin – UAV Digital Twin System
Prishtina
- Developed real-time telemetry and 3D visualization system for DJI Tello drones using FastAPI, React, and Three.js at 20 Hz data streaming rate.
- Engineered robust architecture to enhance system performance and reliability.
- Conducted thorough testing to validate functionality and optimize user experience.

AlbaBridge Tech　　　　　　　　　　　　　　　　　　　　January 2025 to Current
Founder & Lead Developer
- Founded AlbaBridge Tech, an education technology startup developing BeAlbanian, a gamified AR platform for learning Albanian language and culture.
- Designed and implemented an ecosystem integrating augmented reality (Unity platform), gamification, and speech recognition to promote cultural learning and preservation.
- Built the platform using React, Unity, Supabase, PostgreSQL, and Google Cloud Speech-to-Text for real-time interactivity and data-driven learning analytics.

Clarkson University　　　　　　　　　　　　　　　　　　　August 2022 to May 2023
Research Assistant (Prof. Craig Merrett)
- Conducted structural and aerodynamic analyses of butterfly wings using ANSYS Fluent and Structural.
- Utilized ANSYS FEA and Fluent for thorough modeling and analysis.
- Prepared presentations for weekly updates to Professor Craig Merrett.

Clarkson University　　　　　　　　　　　　　　　　　　August 2022 to February 2023
Nasa-Rasc Al Team Leader

- Led collaborative team across partner universities on three continents, including Khalifa University and Royal Melbourne Institute of Technology.
- Managed Thermodynamic subgroup, overseeing project progress reports and coordinating with team leads.

Clarkson University   January 2021 to January 2022
Research Assistant (Prof. Cetin Cetinkaya)
- Analyzed acoustic response of 3D-printed materials using waveform and FFT data in MATLAB.
- Prepared weekly reports for Professor Cetin Cetinkaya to summarize findings.

Publications

"Multispectral Pedestrian Detection in Low-Light Conditions: Infrared, Visible, and Fusion-Based Approaches for CCTV Applications."
Under review. To be presented at the UBT Annual Conference, October 28, 2025.
- Developed a YOLOv8-based multimodal detection framework integrating IR/VIS fusion and Weighted Boxes Fusion (WBF).
- Achieved 0.97 precision under challenging low-light conditions; research advances computer vision and intelligent sensing systems.

Technical Skills

- Python and TypeScript
- C++ and JavaScript
- React and Node.js
- FastAPI and Supabase
- PostgreSQL and Three.js
- Unity
- ROS and ANSYS Fluent
- SolidWorks and Simulink
- CATIA and YOLOv8
- Computer vision techniques
- Digital twin modeling
- UAV telemetry systems
- IoT system design
- Teaching and supervision
- Technical writing skills
- Project management expertise

Honors And Leadership

- Founder & Lead, DBF Kosovo, First AIAA Design-Build-Fly team in the Balkans
- Member, Sigma Gamma Tau, Aerospace Engineering Honor Society
- Participant, NASA RASC-AL International Research

Research Interests

- Systems Engineering
- Robotics and Automation
- Digital Twins
- UAV Systems
- AI-Based Sensing