YUKTI KATHURIA

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EDUCATION

University of Massachusetts Amherst **Expected Graduation: August 2027**

Ph.D. Industrial Engineering

University of Illinois at Urbana-Champaign

M.S. Aerospace Engineering (Aug 2020) 3.31/4.0

B.S. Aerospace Engineering (May 2018) 3.66/4.0

Data Science Fellow **Jan 2021 – April 2021**

NYC Data Science Academy

WORK EXPERIENCE

Data Science and Machine Learning Intern **Aug 2020 – May 2021**

CONDITION:BLACK

- Developed company AI policy for data handling
- Implemented speech data processing mechanism using PyTorch and Silero models
- Implementing named entity recognition (NER) technique using MS Azure models for sensitive data retrieval
- Used regular expressions for sensitive data identification and retrieval

RESEARCH EXPERIENCE

Quantitative Methods to Model Healthcare Disparities **June 2023 - Present**

Research Assistant (Capan Lab)

- Conducted a survey study to collect data on the nursing student's health and wellbeing
- Performed data visualizations to illustrate impact of social determinants of health on physical health outcomes
- Presented a poster at the Second Annual Nursing and Engineering Symposium

Pointing Payload Team Lead for Cooling, Annealing and Pointing Satellite (CAPSat) **Nov 2016 - May 2018**

Research Assistant (Engineering System Design Laboratory)

- Perform hardware in the loop (HIL) tests for the assembled payload on the spherical air-bearing
- Developed a mechanical system that includes piezoelectric rotary and bending actuators to build a strain actuated solar array to provide fine and coarse pointing control
- Developed an in-house setup for the strain gage testing and performed static and dynamic calibration of semiconductor strain gages
- Performed outgassing tests of strain gages, epoxies and electrical components in thermal vacuum chamber and baking tests in thermal oven to validate the components according to NASA Outgassing standards
- Performed a finite element analysis for the payload attached to the bus in Creo Simulate to analyse the maximum bending of the panel for the purpose of sizing the thickness of the panel
- Analyzed the maximum locking torques experienced at the root of the panel for the calibration of the electronics
- Created payload interface documents and developing command grammar for communicating between the payload software suite and microcontroller on-board (C2000 Piccolo)
- Developed power, mass, data and volume budgets for the payload
- Manage a team of 9 people on the development of the payload hardware
- Presented this work to NASA for Preliminary Design Review (PDR) and Critical Design Review (CDR)

Strain Actuated Solar Arrays (SASA) Project **April 2016 - August 2016**

Research Assistant, (Aerospace Robotics and Control Laboratory)

- Determined the correlation between the voltage/slewing values along the length of the solar array
- Designed visual aids using video editing software to depict the motion of the experimental setup and reduce noise

Analysis of the Power Requirements of a Cross-Flow Fan **January 2016 - May 2016**

Research Assistant (Applied Aerodynamics Group)

- Developed an algorithm to find the power required by a cross-flow fan using experimental data from the wind tunnel
- Assembled a test wing and fan in the subsonic wind tunnel

RELATED COURSES

Aerospace Control Systems	*Mechatronics*	*UAV Navigation and Control*
Computational Aerodynamics	*Signal Processing*	*Control System: Theory and Design*
Mechanics of Aerospace Structures	*Finite Element Method*	*Nonlinear Programming*
Autonomous Mobile Robots	*Experimental Robotics*	*Analytical Dynamics*
Analytical Dynamics	*Uncertainty Quantification*	*Multibody Mechanical Systems*

TEACHING EXPERIENCE

MAE 3420 COMPUTATIONAL METHODS **Jan – May 2022**
Graduate Teaching Assistant, University of Virginia
• Hosted lab sessions and answered student questions related to course material and homeworks
• Graded homeworks on a bi-weekly basis and midterm exams

MAE 4710 MECHATRONICS **Jan – May 2022**
Grader, University of Virginia
• Developed rubrics and graded labs

MAE 4610 MECHANICAL ENGINEERING DESIGN I **Aug – Dec 2021**
Graduate Teaching Assistant, University of Virginia
• Hosted work sessions and guided students on their capstone project
• Graded the progress and quality of their robots
• Assisted students with code development in ROS

AE 461 STRUCTURES AND CONTROL LABORATORY **Jan – May 2020**
Grader, University of Illinois at Urbana-Champaign
• Graded prelabs based on provided rubric

AE 199 DESIGN, BUILD, FLY **Aug – Dec 2018**
Graduate Teaching Assistant, University of Illinois at Urbana-Champaign
• Guest lectured and held workshops
• Assisted in the planning and development of course materials (including homeworks, projects)
• Graded homeworks and reports

AE 321 MECHANICS OF AEROSPACE STRUCTURES **Aug – Dec 2017**
Grader, University of Illinois at Urbana-Champaign
• Grade homeworks on a bi-weekly basis and midterm exams

AE 202 AEROSPACE FLIGHT MECHANICS **Jan – May 2017**
Grader, University of Illinois at Urbana-Champaign
• Developed rubrics for grading homeworks and graded homeworks on a weekly basis

MATH 125 LINEAR ALGEBRA FOR BUSINESS **Sep - Dec 2016**
Grader, University of Illinois at Urbana-Champaign
• Graded 300 exams on a bi-monthly basis
• Proctored multiple exams throughout the semester

PUBLICATION

• Vedant, V., **Kathuria, Y.**, & Ghosh, A. R. M. (2018). Sensor fusion for attitude determination. In C. A. H. Walker (Ed.), *Guidance, navigation, and control, 2018* (pp. 203-214). (Advances in the Astronautical Sciences; Vol. 164). Univelt Inc.

AWARDS

- **UVA Mechanical Engineering Department Distinguished Fellowship** **Aug 2021**
- **Dean's List** for academic achievement **May 2018**

- **Jo Ann Haynes Platt and Daniel Wall Platt Memorial Award** **April 2017**
- **Lee H. Sentman Scholarship and FMC Award of Excellence** **April 2015**

LICENSE/CERTIFICATIONS

Technician Class (**ARRL, the national association for Amateur Radio)**
• License KD9JMV **Expires on**: 10/23/2027

COMPUTER SKILLS

• **Programming:** MATLAB, Python, C++, R, Docker, Jupyter Notebook, Github
• **CFD:** StarCCM+
• **CAD:** NX 9.0, PTC Creo Parametric, Fusion360, Inventor
• **FEA:** Creo Simulate, Abaqus
• **ROBOTICS**: ROS

MEDIA COVERAGE

• Covered by ISE department for work as CAPSAT Payload Team Lead “CAPSAT undergraduate students prepare to launch a satellite **September 2017**