

# Amulya V. Gottipati

23015 Broadrun Meadow Circle  
Ashburn, VA 20148

Email: amulya.v.gottipati@gmail.com  
Phone: 703-728-6916

## Employment/Internships

### ***Paid Intern for Commonwealth Cyber Initiative Program***

***(20 hrs/wk, Jun 2024 - Present)***

- Interned at Solvitur Systems LLC, where I developed a 98% accurate SGD phishing classifier and LLM trained on 18,000 emails for phishing generation, advancing AI applications in cybersecurity
  - Based on my strong performance, I received a job offer post-internship as a federal contractor for the Office of Cybersecurity and IT Risk Management under the Department of Commerce
- Engaged in a professional development boot camp, where I networked with various professionals in the technology field such as Vint Cerf (Father of the Internet) and Noelle Russell (Senior Architect on Amazon Alexa)

### ***1 of 10 Students Selected to Intern for The Coding School: Global AI Research Program***

***(15 hrs/wk, Jun - Jul 2024)***

- Developed a research project on using a random forest model to forecast US terrorist deaths by analyzing factors that influence terrorist attacks
  - Enabled proactive counter-terrorism strategies
- Collaborated with Lev Paciorkowski, a PhD candidate from Washington University
- Presented findings in a virtual research symposium to the board of directors of The Coding School

### ***Selected to Partake in AI4Defense Program Held by George Mason University & DoD***

***(30 hrs/wk, Jun - Jul 2024)***

- Addressed the real-world issue faced by Department of Defense (DoD) personnel in performing the labor-intensive task of searching through the 3,000+ page National Defense Authorization Act (NDAA) for vital information
- Developed TermTrack, a NLP/text-analysis application that automates the process of analyzing the frequency of geopolitical terms, aiding personnel in identifying shifts in national defense priorities
  - Further designed a budget analysis feature that allows personnel to track sector-wide funding allocations
- Collaborated with Allen Vance, the Acting Deputy Director of the Defense Digital Service (DDS) in the Department of Defense's Chief Digital and Artificial Intelligence Office
- Placed 2nd at the George Mason University Symposium
  - Proposed for integration into DoD systems by a judge panel composed of program managers from National Security Innovation Network and Vice President of Booz Allen Hamilton Inc.

### ***CEO of MechaniGals - Organization to Encourage Young Women in Robotics***

***(8 hrs/wk, Jul 2023 - Present)***

- Spearheaded robotics workshops in the United States and around the world, including underserved communities, for 300+ students from grades 3-9 in Ashburn, VA; Hyderabad, India; Vijayawada, India
- Provided training on fundamentals of the engineering design process; guided students to design a tank drive using CAD software and code programs in C++
  - Instructed students to build drivetrains, various types of intakes, and Double Reverse 4 Bar (DR4B) mechanisms

### ***Paid Intern at JFAssociates, Inc***

***(40 hrs/wk, Jun - Aug 2022)***

- Conducted data/time analyses for class action lawsuits in off-the-clock work, manually tracking second-by-second tasks such as PPE donning/doffing by Cisco and Hollister workers, and recording their movements simultaneously in Excel
- Performed motion studies to improve labor standards and eliminate delays

## Education

### **Rock Ridge High School and Academies of Loudoun - Ashburn, VA**

*Diploma in Progress* - Anticipated Graduation Date - Jun 2025

Weighted GPA: 4.62

Rank: Summa Cum Laude (Top 5%)

## Research

### **International Research Collaboration with Daegu Science High School in South Korea**

***(8 hrs/wk, Jul 2023 - Present)***

- 1 of 10 students chosen for the AOS-Daegu Science High School selective global partnership program (8.33% admission rate)
- Utilizing exogenous variables to forecast dengue outbreaks in South America and Southeast Asia using a ridge regression analysis and a seasonal autoregressive integrated moving average model to determine an intercontinental relationship between outbreaks in different regions of the world
- Research paper currently undergoing peer review for the International Science and Education Research (ISER) journal, published by West Point Press (associated with the prestigious United States Military Academy)
- Invited to present my research poster at the 17th International Science Youth Forum (ISYF) in Singapore, networking with Nobel Laureates

**Predicting Probability of Contracting Diseases Using Risk Factors with Machine Learning** *(6 hrs/wk, Jun - Sep 2023)*

- Further improved the accuracy of a machine learning-based product that recommended interventions to increase the longevity of people by using risk factors for disease to predict the probability of contracting the disease

**Machine Learning Lifespan Calculator** *(6 hrs/wk, Mar - Jul 2023)*

- Developed a machine learning-based lifespan calculator that calculates an individual's life expectancy using 16 personal parameters

**Machine Learning to Make Recommendations on Increasing Longevity** *(6 hrs/wk, Dec 2022 - Mar 2023)*

- Constructing a meta-regression and Bayesian regression framework to combine results of scientific research and surveys of people's lifestyles to make recommendations on interventions that increase the longevity of individuals
- Submitted product to a national competition launched by the federal government for AI/machine learning solutions for healthcare in America

**Using Software To Extract Key Findings From Scientific Research Papers** *(6 hrs/wk, Jun - Sep 2022)*

- Using natural language processing and text analysis to extract key findings from scientific papers on diets and distill principal findings in a format easily understood by the general public
- Presented findings at the 2022 US Health Data Science Conference (DSC)

**Honorable Mention in Toshiba ExploraVision Competition** *(2 hrs/wk, Oct - Apr 2022)*

- Proposed a future-oriented idea for a machine learning algorithm that analyzes virus components to design a vaccine, aimed at eliminating the obstacles of the current vaccine development process

**Conrad Innovator in Conrad Challenge** *(4 hrs/wk, Aug - Jan 2022)*

- Designed a wearable allergen-tracking device that measures the pollen concentration in a direct area

**Two-Time Consecutive National Finalist in eCYBERMISSION Competition** *(10 hrs/wk, Jun 2018 - 2020)*

- Developed a crowd-sourced, geo-location, photo-reporting app that would aid city authorities in locating mosquito-borne disease clusters in real-time, and received a STEM-in-Action Grant of \$5,000 to benefit the local community
- Developed an affordable water filter consisting of natural substances that can be utilized by citizens of developing nations
- Awarded \$2000 educational scholarship

**Technology Student Association** *(5 hrs/wk, Sep 2019 - Mar 2020)*

- Researched the modification of existing CAR-T cell and CCR5 removal therapies to potentially cure HIV

## Achievements

- Placed 1st at TechDuels debate competition - Jun 2024
  - Ardently defended the position that artificial intelligence is a job creator!
- Placed 2nd at the Academies of Loudoun Symposium in Computational Biology and Bioinformatics Category - May 2024
- Ranked among top 20 teams in the UVA Programming Competition - Apr 2024
- Awarded Honorable Mention by HHMI Janelia Research Campus at Loudoun County Public Schools Regional Science and Engineering Fair - Mar 2024
- Ranked among top 20 teams in the Advanced Section of the Lockheed Martin CodeQuest Competition - Feb 2024
- Led the VEX Robotics Competition (VRC) team to be a four-time consecutive state finalist and a three-time international finalist - Mar 2019 - 2023
  - Served as the primary programmer and engineer, utilizing CAD to design various robot modules and developing PID controllers and odometry techniques for precise coding of the robot's autonomous routes
  - Mentored novice teams by explaining the rudimentary principles of creating a world-winning engineering notebook and illustrating block coding using the VEXcode V5 Blocks Library - guidance led these teams to qualify for the world championship
- Ranked among top 10 teams in the VCU Programming Competition - Feb 2023
- Placed 1st in two divisions at the Academies of Loudoun Hackathon - May 2021
  - Health Category: Placed 1st for my innovative approach in ensuring food safety/public health by developing a machine learning algorithm capable of predicting whether a potato was poisonous or healthy

- Best Middle School Category: Coded a fun and creative game where the user is a potato in space and must destroy evil aliens by shooting lasers

## Interests and Activities

- **Advocate for Expanding Computer Science Opportunities to K-12 Students** (2 hrs/wk, May 2023 - Present)
  - Selected to represent my school by engaging in a live-streamed conversation about my perspectives on technology use in school and for personal learning, and experiences using AI
  - Chosen to represent my school at Loudoun County School Board meeting to advocate for the expansion of post-AP computer science courses
  - Volunteered at the Rock Ridge “Learn to Code” Event by teaching 20 elementary school students how to code their own “Snake” game in Scratch software
- **Vice President of Rock Ridge Robotics Club** (3 hrs/wk, Sep 2023 - Present)
  - Designed and delivered presentations to equip 15 new members with the essentials of robotics, focusing on key concepts such as the engineering design process, CAD prototyping for modules, chassis engineering, and programming robots using C++
  - Organized and led hands-on robotics workshops for 20 elementary and middle school students, inspiring the next generation of engineers by teaching them these fundamentals in a fun and engaging way
- **Vice President of Rock Ridge Programming Club** (3 hrs/wk, Sep 2022 - Present)
  - Actively recruited and trained 10 new members by organizing practice coding competitions on OpenKattis, to enhance their programming skills
  - Collaborated with my computer science teacher to manage logistics for remote programming competitions such as ensuring smooth travel arrangements and securing necessary permission forms
- **Communications Officer of Rock Ridge Computer Science Honor Society** (2 hrs/wk, Sep 2022 - Present)
  - Researched and shared various computer science opportunities, internships, and workshops to support members’ professional growth
  - Facilitated clear communication among 50 CSHS members using email and Schoology software
  - Designed and distributed flyers, and broadcasted key PA announcements at elementary/middle schools about upcoming workshops
- **Captain and Varsity Debater on Rock Ridge Lincoln-Douglas Debate Team** (5 hrs/wk, Sep 2021 - Present)
  - Led bi-weekly skill workshops on LD fundamentals such as value clash, speaker drills, and voter issues
  - Mentored 40 novice debaters by reviewing/editing cases and research briefs
  - Judged numerous mock debates by providing constructive feedback on students’ constructive and rebuttal speeches
- **Mentor in Rock Ridge WINGS Program** (1 hr/wk, Aug 2023 - Present)
  - Served as a liaison for transitioning 60 freshman students into high school
  - Developed and delivered lesson plans on mental health, stress management, and peer pressure
- **Member of National Honor Society** (1 hr/wk, Sep 2023 - Present)
  - Volunteered at various school events such as the Rosa Lee Carter elementary school science fair and tutored struggling computer science students, earning 30 volunteer hours
- **Member of Academies of Loudoun Computer Science Honor Society** (2 hrs/wk, Sep 2023 - Present)
  - Volunteered at the Academies of Loudoun “Hour of Code” Event by teaching 30 elementary and 30 middle school students how to code robots to maneuver an obstacle course
  - Volunteered at the Academies of Loudoun Hackathon by leading the “Introduction to Python” and “Introduction to Competitive Programming” workshops for 40 middle and high school students to spark their interest in different areas of computer science they have not explored before
- **Student of Indian Classical Arts** (5 hrs/wk, Aug 2014 - Present)
  - Kuchipudi Dancer:
    - Mastered Aaduvus (rudimentary steps), Jathis (intricate version of steps), and Shabdhamas (full-length dances)
    - Performed dozens of dances at national-level gatherings such as the Indian Heritage Festival and placed first in Kuchipudi competitions
    - Trained burgeoning Kuchipudi dancers

- Sangeetham (Carnatic Music) Singer:
  - Mastered Alankarams (music exercises), Geethams (fundamental melodies), and Keerthanas (devotional compositions)
  - Performed at a variety of Hindu cultural institutions such as Chinmaya Somnath

## Skills

- Programming Languages: Java, Python, C++, Javascript, HTML, and CSS
- Machine Learning: Tensorflow, Keras, NumPy, Pandas, Scikit Learn, Hugging Face
- Computer Operating System Experience: Windows, Mac OS X
- Computer Softwares: Microsoft Excel, Word, and PowerPoint

## Publications

- Co-author of the published research paper *Using Risk Factors for Disease to Predict Probability of Contracting a Disease in a Machine Learning-Based Product That Recommends Interventions to Increase Health and Longevity* - Sep 2023
- Co-author of the published research paper *A Machine Learning-Based Lifespan Calculator* - Jul 2023
- Co-author of the published research paper *A Meta-Regression and Bayesian Regression Framework For Combining Results of Scientific Research and Surveys of People's Lifestyles to Make Recommendations on What Interventions Will Help Them Live Longer and Healthier* - Mar 2023
- Co-author of the published research paper *Using Software To Extract Key Findings From Scientific Research Papers: A Case Study Using Research On Diets* - Sep 2022

## Certification Courses

- MIT TRAIN Machine Learning Course
- Udemy Java Development Bootcamp Course
- Udemy Python Programming Course
- Kaggle Introduction and Intermediate Machine Learning courses