Dean C. Gumas

12386 Falkirk Drive, Fairfax, VA, 22033 | 571-235-7384 | dean.gumas25@gmail.com

- *Summa Cum Laude - Virginia Tech College of Engineering*
- *B.S. Computer Engineering - Machine Learning Concentration*
- *Highly creative and innovative engineering designer with strong communication and math skills*

Computer Skills & Abilities

- C/C++/C#, Python, Java, Ruby, Javascript, jQuery, SQL, HTML, Julia, Matlab
- Tensorflow, Keras, PyTorch
- Unreal Engine, Unity
- Autodesk Inventor, AutoCAD, Fusion, Blender
- Windows, Mac, Linux
- Microsoft Word, Powerpoint, Excel, LaTex, VBA

Education

Virginia Tech College of Engineering 2020 | Computer Engineering

- Machine Learning concentration - overall GPA 3.87
- Applied Software Design (C++), Machine Learning (Julia), Embedded Systems Design (C)
- Complex Analysis, Advanced Calculus, Discrete Math, Differential Equations, Linear Algebra
- Undergraduate Research Assistant for two professors of engineering
- CanSat design team member, creating satellite payloads for a NASA sponsored global competition

Work Experience

Senior Associate Software Engineer | L3Harris | October 2020 - Present

- ATAK: Principal developer of Android plugins for the DoD provided ATAK software, allowing communication via L3Harris satellite radios through Android devices. Supported the integration of these plugins with several government customer applications, such as BATDOK, a mobile medical software for collecting vital signs and other patient info for transfer via satellite to a hub location. Performed various on-site demos as part of military exercises across the country, ranging as far as Guam. Received a L3Harris Software Excellence award for this effort.
- Lighthouse: Worked on development for the lighthouse website, that performs data collection and control for a variety of devices via satellite communication and IP. Created a mapping page to enable viewing of device positions in real time, and a command page for sending commands to various devices with mobile support. Built mission report and media export tools for formatting, displaying and exporting device data in a human readable format.
- Configuration Tools: Built several configuration tools for L3Harris satellite radio devices allowing the user to program a variety of complex behaviors onto the device. Features include geofencing, beaconing, data collection, and more.

Software Engineering Intern | L3Harris | June 2017 - September 2019

- 2019: Created an algorithm to detect GPS spoofing based on signal analysis. Also developed an algorithm for global positioning based on LEO satellite communication data using gradient descent.
- 2018: Wrote C code for a low energy microcontroller to control a L3Harris satellite radio. Worked to reduce radio on-time by developing an algorithm for determining the best satellite, beam and time for transmission using constellation TLE data.
- 2017: Used Python and shell scripts to create a communication beam map for the Iridium NEXT satellites from large satellite data collection files (>500gb).

Undergraduate Research Assistant | Virginia Tech | September 2019 – May 2020

- Research assistant to Dr. L'Afflitto in the Advanced Control Systems Lab, working on a variety of robot control algorithms/projects.
- Created mapping and ellipsoid algorithms for drone navigation through crowded and hostile environments taking input from an Intel RealSense camera.
- Developed motor control algorithms for a 5-dof robotic arm designed to lift objects of various masses while attached to a quadcopter drone.

Undergraduate Research Assistant | Virginia Tech | September 2017 - December 2017

- Research assistant to Dr. Hsiao on his project GameChangineer, a website designed to create video games from a "game plan" written in plain English. Targeted at helping kids (5-7th grade) get excited about programming while learning the fundamentals of problem solving and design.
- Worked on website and UI design, playtesting, and creating lesson plans for younger kids learning to use the technology. Available to try here https://gc.ece.vt.edu/

Game Design

Gravity Labs

- 2D platformer with directional gravity flipping mechanic. Available to play on my website https://deangumas.github.io/
- Written in Javascript.

VR Driving Simulator

- Driving simulation game built for Oculus Rift VR platform. Uses Mapbox SDK to create maps representing real world areas such as New York City or user created environments.
- Written in C# using Unity.

Find Home

- Open world 3D exploration game with platforming and puzzle challenges required to unlock new areas. All models, environments and animations were personally created.
- Written in C++ using Unreal Engine 4.

Awards and Acknowledgements

- L3Harris Software Excellence Chip (2023)
- Pratt Engineering Scholarship (2017)
- 3rd Place overall at VT Hacks programming competition/hackathon (2017)
- Dean's List with Distinction (2016-19)