Dean C. Gumas

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- *Innovative & creative software engineering designer with strong math, communication & teamwork skills*
- *Experienced in complex algorithms, machine learning/AI, dynamic modeling, object-oriented programming, database & full stack development*
- *Summa Cum Laude - Virginia Tech College of Engineering - Computer Engineering*

Computer Skills & Abilities

- C/C++/C#, Python, Java, Javascript, Ruby, SQL, jQuery, HTML, Julia, Matlab
- Android Studio, Unreal Engine, Unity, Blender, Autodesk Inventor, AutoCAD, Fusion
- Windows, Mac, Linux

Education

Virginia Tech College of Engineering 2020 | Computer Engineering

- Machine Learning concentration - overall GPA: 3.9
- Undergraduate researcher and member of the CanSat competition design team
- Pratt Engineering Scholarship (2017), won 3rd Place overall at VT Hacks programming competition/hackathon (2017), Dean's List with Distinction (2016-20)
- Artificial Intelligence (Python), Applied Software Design (C++), Machine Learning (Julia), Embedded Systems Design (C), Computer Vision (Python), Complex Analysis, Advanced Calculus, Discrete Math, Differential Equations, Linear Algebra

Work Experience

Software Engineer | L3Harris | 2020 - Present

- Full time employment working on satellite & communication systems software development
- 2022: Developed a large scale web application for command/control of L3Harris satellite radios. Also created an Android application to operate satellite radios from a cellular device.
- 2021: Built ATAK plugins for interfacing Android devices with L3Harris satellite radios. Integrated L3Harris capabilities with Air Force BATDOK medical software, enabling patient data transmission via satellite.
- 2020: Created flight dynamics system (FDS) software to automate satellite navigation algorithms and thruster/steering control.

Software Engineering Internships | L3Harris | 2017 - 2020

- Full year & summer internships at L3Harris with focus on satellite-systems software development
- 2020: Designed & applied machine learning methods for object classification & tracking
- 2019: Created an algorithm to detect GPS spoofing. Also developed an algorithm for global positioning based on LEO satellite communication.
- 2018: Designed and wrote C++ control software for a low energy satellite radio microcontroller, to reduce radio on-time by determining the best satellite, beam and time for transmission.
- 2017: Modeled communication beam maps for Iridium NEXT satellites based on ~250 GB of telemetry data (Python & shell scripts).

Undergraduate Research Assistant | Virginia Tech | 2019 – 2020

- Research assistant under Dr. L'Afflitto on robot control algorithms/projects.
- Developed mapping and ellipsoid algorithms for drone navigation as well as motor control for a 5-dof robotic arm designed to lift objects of various masses.

Undergraduate Research Assistant | Virginia Tech | 2017

- Research assistant under Dr. Hsiao on *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.
- Developed website/UI design and performed extensive validation via playtesting. Available at: https://gc.ece.vt.edu/

Game Design

- ***Gravity Labs*:** 2D platformer with directional gravity flipping mechanics. Written in Javascript.
- ***VR Driving Simulator*:** Uses mapbox SDK to create maps representing real world areas such as New York City. Written in C# using Unity for Oculus VR headsets.
- ***Find Home:*** Open world exploration game with platforming and puzzle challenges required to unlock new areas. Written in C++ using Unreal Engine 4.