

# Maanav Singh

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<https://github.com/MaanavS16>

## EDUCATION

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**University of North Carolina at Chapel Hill** – Chapel Hill, NC

Aug 2021-May 2023

Bachelor of Science, **Computer Science**

Bachelor of Arts, **Mathematics**

- Excel@Carolina Accelerated Research Scholar
- 3.862 GPA w/ Dean's List

## EXPERIENCE

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**Baby Brain Mapping Lab, UNC School of Medicine** – Chapel Hill, NC

July 2021-Present

**Undergraduate Student Researcher**

- Trained Deep Learning solutions with **1100+** UNC Hospital patient scans
- Implemented Generative Adversarial Networks with PyTorch
- Applied **algorithms** and **data structures** for efficient data processing in Python

**Critical Error Robotics** – Morrisville, NC

2018-2021

*Competitive High School Robotics Team*

**Lead Programmer**

- Utilized **object-oriented programming** in C++
- Met strict efficiency requirements for accurate real time control
- Applied PID control and Odometry for error correction
- Led team to **21** awards including the Vex World Championship Amaze Award.

## PROJECTS

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**WeatherOrNot:** WeatherOrNot is a health assistant that analyzes risks based on local climate and assessing factors like UV index, pollen concentration, and more.

- Built with **Bootstrap** + **Django** Web Application
- Application link with **SQL** Database for managing user medical data
- Implements **Rest API** for querying local weather and mail updates.
- User feedback improves **Tensorflow** reinforcement model

**BrainScanGAN:** Deep Convolutional Generative Adversarial Network for generating high fidelity and unique T1w & T2w MRI brain scans.

- Optimized with Wasserstein Loss + Gradient Penalty for training stability
- Built with **Pytorch** 3D Transpose Convolutions for multi-scan generation
- **Data visualization, wrangling**, and preprocessing done in Python

## CERTIFICATIONS AND AWARDS

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- DeepLearning.AI TensorFlow Developer – *DeepLearning.AI*
- Generative Adversarial Networks Specialization – *DeepLearning.AI*
- How Google does Machine Learning Course – *Google Cloud*
- ACT WorkKeys NCRC Platinum – *ACT*
- Cybersecurity Finalist – *Technology Student Association National Conference*
- Software Development 1<sup>st</sup> Place – *NC Technology Student Association State Conference*
- RTP High School Programming Competition 2<sup>nd</sup> Place – *RTP HS-PC 2018*
- Best Business Potential Software – *Flare Hacks 2020*

## SKILLS AND INTERESTS

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**Python, Java, Data Structures and Algorithms, Machine Learning, Deep Learning, Tensorflow, PyTorch, SQL, Google Cloud Platform, Applied Mathematics, Linux**