

Rahul Thapa

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<https://github.com/ThapaRahul>

EDUCATION

Villanova University – Villanova, PA

Aug 2017 - May 2021

- Bachelor of Science with Honors, Computer Science
- Minor in Mathematics and Physics

GPA: 4.0

TECHNICAL EXPERIENCE

Villanova Electrical and Computer Engineering Department

Jan 2020 – present

Intelligent Systems Research Assistant

Villanova, PA

- Minimized energy consumption on image processing applications under a quality constraint by finding an optimal combination of approximate settings using genetic algorithm
- Designing algorithm to bypass trivial computations in capsule network and make it more energy efficient

Vanguard

May 2020 – Jul 2020

Software Engineering Intern

Malvern, PA

- Validated on-prem fund data against the cloud data using Python for the analytics team to address any discrepancies
- Refactored and deployed Gurobi optimization models by connecting it with AWS using boto3
- Created REST APIs using Flask to extract the analytics data from an on-prem server and store them in AWS
- Developed intramural sports league web app using Angular, Nodejs, and MongoDB in collaboration with 8 interns
- Trained new developers in the team on using optimization models, basic AWS Management console, and tech stack

University of California Irvine

Jun 2019 - Aug 2019

Machine Learning Research Intern (REU)

Irvine, CA

- Designed a mutual information-based algorithm to select 10/100 best features in an unmanned aerial vehicle system
- Modeled a Recurrent Neural Network (RNN) to predict signal delay using sequence-to-sequence based approach

Villanova Physics Department

Jan 2018 – Aug 2018

Data Analytics Research Assistant

Villanova, PA

- Created histogram of relative orientation between the magnetic field and the intensity gradient using Python
- Modeled a Red Blue Green image of Orion Nebula and plotted magnetic vectors over the image using APLpy

PERSONAL PROJECTS

COVID-Net: Designed a small-sized neural network using SqueezeNet and CapsNet to diagnose COVID-19 from chest X-ray.

- Preprocessed and augmented X-ray data, and trained model on Tensorflow
- Achieved an accuracy of 95.0% and a sensitivity of 88.0%

Feastimate: Developing an intelligent system to record food waste at the dining hall and forecast food needed in future

- Venture funded by Villanova Idea Accelerator Innovation Fund worth \$3500

VuShares: Developing web application for students to buy and sell unused dormitory items and exchange services

- Venture funded by Villanova Idea Accelerator Innovation Fund worth \$250

SKILLS

- **Programming Languages:** Python, Java, JavaScript, C, Matlab, Oracle SQL, CSS, HTML
- **Databases:** MongoDB, Oracle, PostgreSQL
- **Frameworks:** Tensorflow, PyTorch, Flask, Reach-Redux, Angular, NodeJS

AWARDS & LEADERSHIPS

- **Developer Student Club (DSC) Lead/Founder:** Train peers on google technologies **Apr 2020 – present**
- **Resident Assistant:** Organized community-building events, promoted diversity and inclusion **Aug 2019 – May 2020**
- **Peer Tutor:** Tutored data structure and algorithm courses to first- and second-year students **Jan 2019 – May 2019**
- **Klinger Unitas Award:** Villanova Entrepreneurship Competition, 2020, Feastimate project **Aug 2020**
- **Creative Idea Award:** Blockchain Hackathon 2019 organized by R3 **Nov 2019**