Rahul Thapa

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EDUCATION

Villanova University – Villanova, PA **Aug 2017** - **May 2021**

- Bachelor of Science with Honors, Computer Science *GPA: 4.0*
- Minor in Mathematics and Physics
- Relevant Coursework: Applied Statistical Modeling, Stat Methods, Machine Learning (grad), Deep Learning

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**