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EDUCATION

Dickinson College Carlisle, PA, USA

Bachelor of Science in Computer Science and Mathematics Expected February 2024

*Cumulative GPA*: 3.79/4.0; *Major GPA (Computer Science)*: 3.95/4.00; *(Mathematics)*: 3.86/4.00

*Relevant Courses*: Linear Algebra, Computability/Complexity, Database Systems, Data Mining, Large-Scale Open Source Software Development, Analysis of Algorithms, Operating Systems, Computer Organization & Architecture, Senior Seminar

**Honors & Awards**

* [The Forrest E. Craver Memorial Prize in Mathematics](https://www.dickinson.edu/info/20032/mathematics/243/prizes_and_awards): Awarded to a junior student excelling in mathematics

SKILLS

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| Programming Languages: | Java, C/C++, Python, JavaScript, SQL, HTML5, CSS, CUDA |
| Software & Machine Learning:  Certifications: | AWS, MySQL, GitHub, Linux, Pytorch, TensorFlow, NVIDIA, Transformers, Docker  Certified Scrum Master (*Scrum Alliance*) |

WORK EXPERIENCE

Reeplayer Culver City, California

Software Engineer Intern May 2022 – August 2022

* Implemented 4 state-of-the-art video resolution services by providing NVIDIA Maxine real-time AI visual effects.
* Reduced video camera noise by 80% and encoding artifacts by 55% with CUDA C/C++ to provide end-user utilities.
* Automated code coverage from 60% to 80% by modularizing Data Access Objects in Junit tests for camera functionalities.
* Analyzed the optical flow of object movements in 30 soccer videos with aim of predicting the trajectory of soccer players.

[DNB](http://www.dnbprema.com) Goyang-si, South Korea

Full-Stack Software Engineer Intern

* Revamped working process to save 8+ hours per week by modularizing program codes with Spring MVC framework.
* Developed and maintained 40+ backend end-user services of websites managing 6+ databases in MySQL workbench.
* Designed a user-friendly brochure site utilizing HTML, CSS, and JavaScript, resulting in 15% increase in monthly profits.

RESEARCH EXPERIENCE

[Dickinson First Year Seminar (FYS) Assignment](https://github.com/JuheonChu/DickinsonFYSAssignment) May 2022 – Present

* Succeeded independent student-faculty collaborative research on Decision Science with Professor Dick Forrester.
* Authored a Python program with Gurobi solver to assign 660+ Dickinson freshmen to 42+ seminars.
* Accomplished balancing gender and student type ratios by 85% in FYS classes maintaining 16+ course capacities.
* Automates to parse the student data file given by Dickinson College to be loaded into the Student Assignment program.

PROJECTS

COVID-19 Infection Estimation

* Built a deep-learning model that estimates the infection rate of COVID-19 by scanning 740 CT scans of the chest.
* Predicted the COVID-19 infection rate with 64% accuracy utilizing the Pytorch Deep Learning library.

Hugging’s Transformers Open-Source Development

* Coauthored 2 Pull Requests that are merged resolving “good first issues” tickets in Hugging’s Transformers.
* Coordinated with 3-4 senior open-source administrators to debug gigantic Pytorch and Tensorflow codebases.

Albert Q&A System

* Designed an AI Question-Answering system with a pre-trained ALBERT model Transformers, Pytorch, and Tensorflow.
* Achieved answering the question with 78% of accuracy subject to a given context.

Fake News Detector

* Implemented an LSTM model that detects fake news by observing the total weight matrix size of the LSTM training data.
* Created a pipeline that computes 3-dimensional LSTM by producing 2-dimensional LSTM output in tensor.

Butcher Operating System (OS) Kernel

* Demonstrated 16-bit operating system capable of concurrent execution of 8+ open source OS prompt commands.
* Established a file I/O system by incorporating a pipeline that links 4+ software to the disk image.