|  |  |
| --- | --- |
| Juheon (John) Chu | Web design <https://juheonchu.github.io/ResponsivePortfolio/>  Envelope[juhuhni98@gmail.com](mailto:juhuhni98@gmail.com) |  (717) 636-3611   * <https://www.linkedin.com/in/juheonchu/>|  Carlisle, PA 17013 * <https://github.com/JuheonChu> |

EDUCATION

Dickinson College Carlisle, PA, USA

Bachelor of Science in Computer Science and Mathematics Expected December 2023

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

*Relevant Courses*: Linear Algebra, Theoretical Foundations in Computer Science, Database Systems, Data Mining, Large-Scale Open Source Software Development, Analysis of Algorithms, Operating Systems, Computer Organization & Architecture, Senior Seminar, Deep Learning Specialization, Real Analysis, Abstract Algebra

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.
* Dean’s List (5 Semesters)

SKILLS

|  |  |
| --- | --- |
| Programming Languages: | Java, Python, C/C++, JavaScript, SQL, HTML5, CSS, CUDA, Mosel |
| Software & Machine Learning:  Certifications:  Languages: | MySQL, GitHub, Linux, Pytorch, TensorFlow, NVIDIA, Transformers, AWS, Docker  Certified Scrum Master (*Scrum Alliance*)  English (SAT Score: 1400/1600), Korean (Native) |

WORK EXPERIENCE

Dickinson College Carlisle, Pennsylvania

Quantitative Reasoning Associate August 2022 – Present

* Organized weekly office hours for CS and Math courses: Theoretical Foundations of CS and introductory calculus.
* Guided students in test-taking and notetaking strategies by prioritizing assignments and studying for exams.
* Conducted 3-4 exam review sessions for students to prepare for the mid-term and final exams.
* Participated in weekly meetings with the course instructor to assist with course direction decisions.

Computer Science Teaching Assistant **August 2022 – Present**

* Assisted in the design and implementation of Java projects and the use of integrated development environments.
* Tutored 4-6 students weekly on Object Oriented Programming, Data Structures, and algorithm concepts.
* Prepared multiple implementations of a laboratory project in the introductory-level CS course throughout the week.
* Provided timely and frequent feedback to students for improving their code efficiencies.

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 the **Spring MVC** framework.
* Developed and maintained 40+ end-user services of websites managing 6+ databases in **MySQL** workbench.
* Designed a user-friendly brochure site using **HTML**, **CSS**, and **JavaScript**, resulting in a 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 a Question-Answering with the pre-trained ALBERT model, using **Pytorch**, **Tensorflow,** and **Transformers**.
* 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.

Object Detection and Tracking

* Optimized video to operate CSRT object detection and tracking algorithm and attain 50% faster loading speed.
* Utilized Haar Cascade with **Python OpenCV** to detect multi-objects in images by representing pixel values 0.0 to 1.0.

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, using **C/C++** and **Bash**.

Pokemon Database

* Designed a dynamic website to interact with 6 database tables and show relational details of 230+ Pokemon features.
* Utilized **MySQL** and **JDBC** to construct 6 Singleton Data Access Objects and connect to 20+ backend services.

The One Korea

* Designed a responsive franchise-launch website to assign unique URLs to future franchisees.
* Extracted 12+ Spring dependencies to implement 16 UX/UI services for 3 targets (headquarter, franchise, customer).

Nike Model Design

* Developed a user-friendly shopping mall capable of 8+ UX/UI services to serve as a working example of NIKE.
* Utilized **MySQL**, **jQuery**, **AJAX**, and **JSP Servlet** to fetch dynamic data and graphics from 40+ HTTP web servers.

CAMPUS INVOLVEMENT

|  |  |
| --- | --- |
| Major’s Committee (CS & Math):  Chess Club Member  Club Soccer Member | Interacted actively with the Department Chair to provide constructive feedback on the performances of faculty members.  Engaged in weekly chess club activities as a member of the chess club.  Participated in weekly club soccer activities as a goalkeeper. |

PUBLICATION

Patent February 2015 - June 2016

* Published the Patent KR101626932B1 to maintain the flooring materials uncontaminated during the fabrication process.

MILITARY SERVICE

SGT, USAG Casey APO, AP 96224 Republic of Korea July 2018 - April 2020

* Held command, control, and administrative responsibilities for 7 KATUSA soldiers belonging to the U.S. Army units.
* Handled tank management, maintenance, advisory, and live-round training for strengthening U.S-ROK alliance forces.

PROFESSIONAL REFERENCE

[John MacCormick](https://www.dickinson.edu/johnmaccormick) [Dick Forrester](https://www.dickinson.edu/dickforrester)

Professor of Computer Science (Department Chair) Professor of Mathematics and Data Analytics

Carlisle, PA 17013 Carlisle, PA 17013

(717)-245-1626 (717)-245-1668

<jmac@dickinson.edu> <forrestr@dickinson.edu>