

# Woosang (Paul) Kang

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## EDUCATION

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### Cornell University, College of Engineering

*Bachelor of Science in Computer Science; GPA: 3.972*

Ithaca, NY

*Expected May 2023*

## EXPERIENCE

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### Backend Developer

*Cornell Design Tech Initiative*

Ithaca, NY

*Sep 2020 - Present*

- Implemented the backend API for a club application management system using Cloud Functions and Firestore
- Wrote and performed unit tests with Jest for the backend to validate sorting features and average response time
- Provided the team with online documentations on API endpoints and function specifications

### Freelance Web Developer

*Travel dNation*

Seoul, Korea

*Jan 2020 - Apr 2020*

- Built a web app MVP for a tourism service with geospatial querying by retrieving data from the Google Maps API
- Reduced average payload size up to 30% and response time by implementing pagination through query cursors
- Presented the product at major Korean airline companies (Korean Air & JinAir) for investment

### Desk Sergeant, Military Police

*Korean Augmentation to the U.S. Army*

Dongducheon, Korea

*Aug 2018 - Apr 2020*

- Performed Korean-English translation and military law enforcement in professional diplomatic settings
- Completed service as a sergeant & leader of a section of 20+ members, received specialized joint training in multiple fields, covering the UCMJ, Taser certification, self-defense, and more

## PROJECTS

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### R-tree Geospatial Database & Server

- Collaborated in a 4-member team to create an R-tree and reverse-index based geospatial database (coordinates and tags) and an HTTP server with KNN, radius, and tag-based composite querying features in OCaml
- Optimized the R-tree node splitting and collapsing algorithm to handle 100k+ batch add & delete operations, and added CLI & server side logfile generation to enable backups

### Geospatial Service API

- Participated in a mobile app development team of 4, designed the database and the API with Flask-RESTPlus for a location-based service using PostgreSQL and PostGIS, containerized and deployed with Docker and Heroku
- Service selected as the Best Overall Application at the Cornell AppDev Hack Challenge hackathon out of 30+ teams

### Virtual Learning Platform

- Implemented the custom user profile, email verification and tutor-student reservation system of a virtual tutoring service using Django, PostgreSQL, Docker and AWS S3 as a backend developer in a 4-member team
- Won 1<sup>st</sup> place in the Virtual Learning Category at HackOurCampus hackathon out of 200+ participants
- Currently under progress of implementing planned features, including a credit-based payment system and Zoom & Calendly API integration under the mentorship of the hackathon panel

### V's Pick - Mobile Application

- Developed a mobile Location Based Service for curated vegan restaurants in Seoul as the lead developer in a 4-member team
- Implemented admin features with Firebase cloud functions to verify user-submitted restaurant updates and analyze posting patterns of individual users to prevent spamming activities or fraudulent reviews

## ACHIEVEMENTS

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### Dean's List, College of Engineering

Fall 2017, Spring 2018, Fall 2020

## PROGRAMMING SKILLS

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**Languages:** Python, JavaScript, Java, TypeScript, C++, OCaml, SQL, LaTeX

**Web/Mobile:** React, Node.js, Express.js, Django, HTML, CSS, Bootstrap, Gulp, Jest

**Database/Cloud:** Firebase, MongoDB, PostgreSQL, AWS(Lambda, EC2, S3, API Gateway), Docker