Suk Min Hwang

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EDUCATION

University of Illinois at Urbana Champaign — May 2020
B.S. in Computer Science and Economics — 3.3 / 4.0

EXPERIENCE

AGCO Corporation — Jan 2020 - May 2020
Web Development Intern

- Developed web applications, used by 1000+ people a day, to enable clients to decide proper equipment for grain and livestock facilities **(JavaScript, React, Node)**
- Designed RESTful API to transform complex data calculation into useful digital sales tools **(Python, Flask)**

University of Illinois at Urbana Champaign — Mar 2019 - May 2020
Research Assistant

- Designed an algorithm to optimize data collection that minimizes communication needs to better handle bandwidth; Achieved more than 75% data coverage while the baseline attained lower than 50% in constrained network
- Developed a web application **(Python)** and a website in **MVC** design pattern **(JavaScript, Node, MongoDB)**
- Designed an algorithm for optimizing test data extraction from Raspberry Pis and Mininet simulation **(Python)**
- Visualized CPU and bandwidth data in various graphs used for research publications **(Python, Kibana)**

AWARD

Mobile Application Idea Contest — May 2015
1st Place, Joongang Daily Chicago

- Proposed target user, design, features and functions of the mobile app; Analyzed local business reviews and social network based on cultural characteristics to provide an optimized communication platform and real-time information

PROJECTS

Situation Awareness

- Introduced smart sampling technique; Provides a highly summarized newsfeed service based on user-specified interested by calculating the most representative and non-redundant data by constructing a hierarchial namespace for the given set of data; The algorithm (Similar to BFS) traverses the tree by primarily selecting the least-visited branch **(Python, JavaScript, Node, MongoDB, Express)**

Smart Tennis Pairs Matching

- Developed a program to calculate optimal tennis double matches by analyzing playing preference, gender, participation fairness and proficiency difference **(Python)**; Tennis club members' participation rate increased by 20%
- Developed a website to run the program with real-time poll and analyzing functions **(HTML, CSS, PHP, MySQL)**

Pub/Sub-Sum: Content-Summarization-based Pub/Sub Protocol on Information-centric Networks

- **A presenter** and a **2nd author** of the **publication** at the conference, **IEEE Milcom** 2019
- Introduced a new type of congestion handling mechanism that adaptively controls the level of summarization by considering source redundancy in the network; Demonstrated system design, implementation, and evaluation

Git Mobile App

- Designed and implemented a mobile application for GitHub **(React Native)**
- Functions includes user authentication, profile, follow/unfollow, star/unstar, search, filter, and repositories; Used GitHub RESTful API and AsyncStorage to store data locally

Systems Programming

- Wrote a **bash** like shell capable of parsing input and running commands, storing history, handling background processes and process groups; Wrote an implementation of Malloc from scratch and achieved more than 90% of the glibc malloc performance **(C)**

Nonstop Networking

- Built a **TCP Server** and **Client** in for a file sharing application. Used non-blocking I/O (with epoll) to handle concurrent requests on server side. The application supported four basic operations GET, PUT, LIST, DELETE **(C)**

SKILLS

C/C++, Python, Java, JavaScript, Node, React, ReactNative, HTML5, CSS3, PHP, MongoDB, MySQL R, Git, Linux