

MYEONGSOO KIM

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EDUCATION

Kookmin University, Seoul, Korea
B.S. in Computer Science

Mar. 2013 – Aug. 2019

Georgia Institute of Technology, Georgia, United States
PhD student in Computer Science

Aug. 2019 – present

RESEARCH EXPERIENCE

Georgia Institute of Technology, Georgia, United States
Research Assistant, Advisor: Alessandro Orso

Aug. 2019 – present

Program Debloating

- Investigate the issues of bloated programs
- Implement program debloater using MCMC and Reinforcement Learning

Kookmin University, Department of Computer Science, Seoul, Korea
Undergraduate Researcher, Advisor: Eun-Jin Im

Sep. 2018 – Aug. 2019

Implementation of Blockchain-based Secure Energy Trading System using ARM TrustZone [[Github](#)]

- Investigated the security issues from peer-to-peer energy transactions and grouped into four categories
- Implemented peer-to-peer energy transaction platform based on Ethereum smart contracts using a solar panel, a Samsung ARTIK IoT platform and a rechargeable battery
- Assessed 10 energy trading companies based on security elements and compared them to our platform

University of California, Irvine, Department of Informatics, CA, USA
Undergraduate Researcher, Advisor: André van der Hoek

Jun. 2018 – Aug. 2018

Building Software Engineering Chatbots [[Github](#)] [[Demo](#)]

- Implemented “code conflict checking algorithm” to check developers’ working status and to notice the severity if their code is in conflict
- Implemented Slack chatbot which has 14 functional features to help developer’s collaboration environment
- Implemented “intent classifier” using Stanford Parser and Word Vectorization to understand user’s intention. Designed slots and extracted attention words to fill slots and generate appropriate reactions

Kookmin University, Department of Computer Science, Seoul, Korea
Undergraduate Researcher, Advisor: Eun-Jin Im

Jan. 2018 – May 2018

Ethereum Smart Contract Vulnerability Checker [[Github](#)]

- Investigated the security issues from Ethereum Smart Contracts and grouped into eight categories
- Implemented of smart contract vulnerability checker and its ether-wallet interface on top of existing smart contract security tools as a docker container
- Assessed 9 tools based on security elements and compared them to our platform

University of California, Irvine, Department of Computer Science, CA, USA
Undergraduate Researcher, Advisor: Ian G. Harris

Jun. 2017 – Dec. 2017

Detection of Questions and Commands in Text [[Github](#)] [[BlackHat Talk](#)]

- Gathered 180 thousand of scam emails. Scam data was crawled from four websites.
- Implemented text type classifier using CoreNLP, Question Answering System, and TF-IDF
- Distributed the scam detect program using docker container

Kookmin University, Department of Computer Science, Seoul, Korea
Undergraduate Researcher, Advisor: Eun-Jin Im

Mar. 2017 – Jun. 2017

Improving tensorflow API for manycore CPU

- Implemented custom tensorflow API using MKL and OpenMP
- Conducted benchmarking to compare original tensorflow API and our custom API using Perf

WORK EXPERIENCE

IBM Research, New York, United States
Microservice testing researcher

Jun. 2020 – present

- Investigate problems of legacy web application decomposition using kubernetes
- Develop a decomposed web application testing algorithm

Bizbook, Seoul, Korea
Web developer

Dec. 2016 – Mar. 2017

- Created and maintained the front-end standards document using HTML, CSS, and Javascript
- Benchmarked other competitors and updated features using PHP. The features include: Tax calculator, Auto-document recommender, Event roulette, etc
- Developed automated Excel documents

BSsoft, Seoul, Korea.
CMS programmer and Game Master

May. 2016 – Jul. 2016

- Managed NOVA1492 (a robot game) and reported problems to server team
- Maintained NOVA1492 website and database
- Designed game rules and Collected user's feedback

Republic of Korea Army, Pochoen, Korea
Sergeant

Aug. 2014 – May 2016

- Developed auto work scheduler using Excel VBA.
- Developed auto munitions management system using Excel VBA.

TEACHING EXPERIENCE

Kookmin University, Seoul, Korea

Mar. 2017 – Jun. 2017

Teaching Assistant, Computer Programming1 (113090), taught by Prof. Minsuk Lee

- Graded problem sets and tests
- Helped students to understand the course concepts and problems

PUBLICATIONS

Qi Xin, **Myeongsoo Kim**, Qirun Zhang, Alessandro Orso. Program Debloating via Stochastic Optimization: ICSE 2020 New Ideas and Emerging Results.

Myeongsoo Kim, et al. Scam Detection Assistant: Automated Protection from Scammers. In: 2019 First International Conference on Societal Automation (SA). IEEE, 2019. p. 1-8.

Paikari, E., Choi, J., Kim, S., Baek, S., **Kim, M.**, Lee, S., ... & Cheong, C. (2019, May). A chatbot for conflict detection and resolution. In 2019 IEEE/ACM 1st International Workshop on Bots in Software Engineering (BotSE) (pp. 29-33). IEEE.

Myeongsoo Kim, Eun-Jin Im. Ethereum Smart Contract Vulnerability Detector. Journal of the Korea Information Science Association, 2018, 1940-1942.

Myeongsoo Kim, et al. Catch me, yes we can!-pwning social engineers using natural language processing techniques in real-time. 2018. Presented by Prof. Ian G. Harris at 2018 BlackHat USA.

PRESENTATION

- Oral Presentation** Aug. 2018
The 2018 International Summer Undergraduate Research Fellowship at the University of California, Irvine.
Title: Exploring the Possibilities of Software Engineering Chatbots
- Poster Presentation** Jun. 2018
2018 Korea Computer Congress at the Je-Ju International Convention Center.
Title: Ethereum Smart Contract Vulnerability Checker
- Oral Presentation** Aug 2017
The 2017 International Summer Undergraduate Research Fellowship at the University of California, Irvine.
Title: Detection of Questions and Commands in Text

AWARD

- CS 7001 Award at 2020 GT Computing Student Awards Apr. 2020
Project: Program Debloating using MCMC
- First prize at LINE Blockchain competition Dec. 2018
Project: Blockchain-based Secure Energy Trading System Implementation
- Second prize at 2018 KMU Capstone Design Competition Nov. 2018
Project: Secure P2P Energy Trading Platform
- Best Undergraduate Paper Award at 2018 Korea Computer Congress. Jul. 2018
Paper: Ethereum Smart Contract Vulnerability Checker
- Software Creativity Award (SW first prize) from president of Korea Science Foundation. Mar 2017
Project: Hero Chatbot
- Third prize at Software-Centered University Council. Feb. 2017
Project: Virtual Girlfriend Chatbot
- Second prize at Kookmin University. Dec. 2013
Project: Autonomous driving car with LEGO NXT sensors

TECHNICAL SKILL

Language: HTML, CSS, JavaScript, PHP, Java, Python, C, C++, Solidity
OS: Windows, Mac, Ubuntu, CentOS
Collaboration Tools: Git, Docker, Slack, Trello
Domain Experience: Natural Language Processing (Speech recognition & Text recognition), Fully connected Neural Network, Convolutional Neural Network, Recurrent Neural Network, Blockchain (Ethereum & EOS), Web (frontend, server, MySQL, web application), NXT sensors, Artik IoT Platform (ARM TrustZone)