

WOOJOO NA

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EDUCATION

Tufts University

Sep. 2021 - Present

Ph.D. in Computer Science

· Advisor : Professor Bert Huang

· Focus : Machine Learning & Optimization

[2019-2021] : Mandatory military service in the Republic of Korea Army

University of Oxford

Oct. 2016 - July 2019

B.A. (Hons) in Mathematics

RESEARCH EXPERIENCE

Data Intensive Studies Center, Tufts University

Sep. 2021 - Present

Graduate Researcher, Advisor : Professor Bert Huang

- Identified a convex layer structure in the label space of Constrained Label Learning Algorithm, to suggest new bounds and in-depth geometric algebraic analysis of the solution space.

University of Oxford, Mathematical Institute

July 2019 - Dec. 2019

Undergraduate Researcher, Advisor : Professor Christophe Petit

- Developed a trapdoor attack against parameters suggested at NutMiC2019 conference on Cayley hash functions

- Presented at the 17th IMA International Conference on Cryptography and Coding

University of Oxford, Department of Computer Science

July 2019 - Dec. 2019

Undergraduate Researcher, Advisor : Professor Thomas Lukasiewicz

- Worked on conceptual space of transformer encoder, studying the similarities between NLP architectures and the human brain

University of Oxford, Mathematical Institute

June 2018 - Oct. 2018

Undergraduate Researcher, Advisor : Dr. Andrey Kormilitzin

- Competed in the n2c2 challenge on Adverse Drug Events and Medication Extraction in EHRs

- Exploited CNN architecture and a character level word embedding model to demonstrate a robust approach to concept extraction and relation extraction.

University of Oxford, Department of Computer Science

June 2018 - Oct. 2018

Undergraduate Researcher, Advisor : Professor Thomas Lukasiewicz

- Worked on knowledge graph completion for ontology reasoning

WORK EXPERIENCE

Republic of Korea Army, 2nd Artillery Regiment

Feb. 2020 - Aug. 2021

Sergeant, Fire Direction Operator

- Computed solutions to fire missions and relayed the resultant commands to cannons

Utpal Shanghvi Global School

July 2017 - Aug. 2017

Project Intern

- Pitched every week focusing on economic sustainability and general health of villagers in Wada, Maharashtra, India

- Collected water quality data to initiate water purification, initiated flower ornament sales aimed at religious ceremonies and water purification . Borrowed 20 acres of unused farmland free of charge with the sponsorship of local landowner.

LEADERSHIP AND SERVICES

Oxford Invariants (Oxford Mathematics Society)

Treasurer

April 2018 - April 2019

Oxford Energy Society

Events Officer

April 2018 - April 2019

Oxford Mathematical Institute

Mentor (Problem Solving Matters program)

June 2018 - Oct. 2018

St.Nicholas Primary School, (Oxford, UK)

Volunteer Teacher

Oct.2016 - April 2018

Dun-nae Primary School, (Hoengsung, Korea)

After school Mathematics Science Volunteer Teacher

Aug.2013 - Dec.2015

SKILLS

Languages: Korean(Native), English(Fluent), Spanish(A2)

Programming: Python, MATLAB

Software & Tools: Pytorch, Tensorflow

INVITED TALK

Ewha Womens University, CMS

Jan. 30th, 2020

Title : Trapdoor attack on Cayley hash function parameters proposed at NutMic 2019 conference.

AWARD SCHOLARSHIPS

- Tufts University Full Tuition Scholarship (\$ 30,600)
- Tufts University Dean's Fellowship (\$ 5,000)
- LMH Academic Development Fund, Undergraduate summer research (£500)