

DOGUHAN YEKE

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SUMMARY

Currently, I am a research assistant in the department of Computer Science at Purdue University, working on computer security and system security in PurSec Lab. For the summer of 2024, I am looking for a system security research internship. Mainly, I am interested in mobile security, practical deep learning applications in security and safety and security of automated systems.

EDUCATION

Purdue University, US *August 2021 - Ongoing*
Ph.D, Computer Science *3.76/4.00*
Advisors: Asst.Prof. Z. Berkay Celik and Asst.Prof. Antonio Bianchi

Middle East Technical University(METU), Turkey *June 2017 - July, 2020*
M.Sc, Computer Engineering *4.00/4.00*
Graduated with the top grade, Ranked 1st
Thesis: Improving Document Ranking with Query Expansion based on BERT Word Embeddings
Advisor: Prof.Dr. Nihan Kesim Cicekli

Middle East Technical University(METU), Turkey *September 2013 - June 2017*
B.Sc, Computer Engineering *3.24/4.00*
Graduated with Honors
Advisor: Assoc.Prof. Yusuf Sahillioglu

ACADEMIC AND RESEARCH EXPERIENCE

Department of Computer Science at Purdue University, US *August 2021 - Ongoing*
Research and Teaching Assistant

- CS307: Software Engineering, CS251: Data Structures and Algorithms

Department of Computer Engineering at METU, Turkey *August 2018 - July 2021*
Research and Teaching Assistant

- CEng492: Computer Engineering Design, CEng489: Introduction to Computer Security, CEng350: Software Engineering, CEng331: Computer Organization

eNTERFACE at University of Mons, Belgium *June 2015 - August 2015*
Undergraduate Research Assistant

- Implemented Python modules for the classification of objects and used the Neo4j Graph database to visualize the classification.

TSK Modsimmer, Turkey *August 2015 - September 2015*
Summer Internship

- Wrote a simulation of a fire forest using C++ with concurrency and also implemented an interface with QT.

- Given a point of fire, the program estimates where the fire will spread using different parameters like wind speed and tree population.

Department of Computer Engineering at METU, Turkey *September 2015 - January 2015*
Undergraduate Teaching Assistant

- CEng230: Introduction to C Programming

INDUSTRIAL EXPERIENCE

Comodo, Turkey *June 2017 - August 2018*
Software Developer

- Worked as a Backend Developer: used different tech stacks like Flask, Express, Javascript, Relational Databases, REST APIs, Redis, AWS and testing, etc.
- Worked as a Security Researcher: implemented a Machine Learning model for detecting malware and integrating third-party libraries into our system.

SAP Development Center, Turkey *June 2016 - September 2016*
Student(Intern) Software Developer

- Worked as a Golang developer in an agile team during my internship.

PEER-REVIEWED PUBLICATIONS

Conference Publications

C1 Doguhan Yeke, Muhammad Ibrahim, Guliz Seray Tuncay, Habiba Farrukh, Abdullah Imran, Antonio Bianchi, and Z. Berkay Celik
Wears my Data? Understanding the Cross-Device Runtime Permission Model in Wearables
[Paper] [Code], [Slides]
Proceedings of the IEEE Security and Privacy (S&P), 2024 (to appear).

ACADEMIC ACHIEVEMENTS

2023: Student contributor of **Google ASPIRE Award**

2022: Student contributor of **Google ASPIRE Award**

2021: **Interpersonal Conversation Partner** at Purdue University

2019: **Best Course Performance Award** at METU.

2019: **Highest Departmental cGPA** in all graduates of Master's Degree at METU.

2013-2017: **High Honor Student** in multiple semesters of Bachelor's Degree at METU.

2016: As a **Huawei Seeds for the Future** Participant, chosen as one of 15 students from different universities in Turkey, spent two weeks in Beijing and Shenzhen taking classes about 5G and telecom.

2011-2012: Placed 5th in Turkey in **Mathematics Olympiads** in High School conducted by the Scientific and Technological Research Council of Turkey (TUBITAK), sponsored by OYAK.

PROJECTS

Industrial Control System Modeling with SCEPTRE Framework *May 2022 - October 2022*
Sandia National Laboratories

- Collaborated with Sandia Labs while studying at Purdue University in the summer of 2022.

- Deployed Cyber Emulation, Modeling, and Analysis Tools on the SOL4CE.

SOFTWARE PROJECTS

nar: Distributed File System (Team of 4 people)

As a senior year graduate project, we developed a peer-to-peer distributed file system that provides an infrastructure that can store the file in a distributed manner. We see this project as a new way of Internet in which we will decentralize the Web and evade censorship.

Used tech: C++

Website: <https://senior.ceng.metu.edu.tr/2017/gruprecklessuncivilpeople/about.html>

Github repository: <https://github.com/twoinfinitemloops/nar>

File Hosting Service(Backend)

Implemented a backend side of file hosting service (similar to Dropbox) using AWS Services as a week-end hobby project. The application lets users upload, download, list, and delete files.

Used tech: Flask, AWS S3, AWS Lambda Function, AWS ElasticSearch, Postgresql

Github repository: <https://github.com/twoinfinitemloops/thundra-backend>

Agile Estimator (Team of 2 people)

Developing an online system for giving points to tasks in Scrum Boards. The application will offer more features to developers than other available applications (e.g., score the tasks without seeing each other's score.)

Used tech: React, Express, Node.js, and Supertest

Github repository: <https://github.com/twoinfinitemloops/AgileEstimation>

Movie Recommendation System with Apache Spark (Team of 2 people)

Developed a content-based filtering and collaboration filtering based recommendation system using MovieLens 20M dataset.

Used tech: Scala, Apache Spark, and MLlib

Github repository: <https://github.com/twoinfinitemloops/MovieRec>

Training Page for SQL Injection [Academic Purposes]

Created a web page for exercising the SQL injection attacks.

Used tech: Flask, MySQL

Github repository: https://github.com/twoinfinitemloops/sample_page_for_sql_injection

Order/Execution Management System in Algorithmic Trading

Developed using FIX protocol(version 4.2) and offered different options for a user, like TWAP execution of the security.

Used tech: Java and Fix Protocol 4.2

Malware Detection using LSTM (Team of 2 people)

From a different perspective, treating a malware binary file as an image for the Deep Learning course was also a Kaggle Challenge. We wrote a paper for showing the steps of our work.

Distributed System Project

Constructed layer-isolated network communication for highly mobile nodes using leader election algorithms in mininet environment.

Used tech: Python

Efficient Set Intersection Performance Measurement Project

For an Information Retrieval course, measured different set intersection algorithms like galloping search.
Used tech: C

TECHNICAL STRENGTHS

FullStack: React, Redux, Node.js, Express, MongoDB, Typescript, Mongoose, AWS Services, In-memory database.

Languages: Python, C++, C, Javascript, Java, Scala, R, Assembly, Haskell, Verilog.

Tools: Tensorflow, Keras, PyTorch, AWS, RabbitMQ, Jupyter Notebook etc.

Toefl Score: 100 Reading: 26, Listening: 26, Speaking: 25, Writing: 23

GRE Score: Quantitative: 167, Verbal: 141, Analytical Writing: 3,5

COURSES TAKEN

Undergraduate Courses: Object Oriented Programming, Cloud Computing, Machine Learning

Graduate Courses: Information Security, IoT Security, Distributed Systems, Computer Networks, Algorithms, Big Data Analytics, Advanced Deep Learning, Statistical Data Analysis, Information Retrieval, Computational Geometry, Algorithmic Trading