

Unat Teksen

Istanbul, Turkey

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Education

Kadir Has University

2018 – 2023

Bachelor of Science in Computer Engineering, Full Scholarship

Istanbul, Turkey

GPA: 4.0/4.0 (Valedictorian)

Experience

Koç University

June 2022 – Present

Research Intern

Istanbul, Turkey

- Working at *Koç University Cryptography, Security, and Privacy Research Group* as an undergraduate researcher.
- Supervisors:** Assoc. Prof. Alptekin Küpçü, Asst. Prof. Ercüment Çiçek
- Working on the implementation of novel defensive mechanisms against attacks in privacy-preserving machine learning systems. Specifically, working with split learning implemented in **PyTorch**.
- Implemented anomaly detection models in **scikit-learn** from scratch to detect and mitigate the impacts of a specific attack in a distributed and private deep learning model.
- Achieved **100% accuracy in detecting** all existing attacks, and **21.8 and 50 times faster** than the previous two defense methods in the literature.
- Analyzing a wide range of attacks in the literature using **dimension reduction methods** (t-SNE, PCA).
- Contributed as a **co-author** for two papers.
- PyTorch, scikit-learn, NumPy, Pandas, and, Matplotlib are used throughout the project.*

ASELSAN

June 2022 – July 2022

Software Engineering Intern

Ankara, Turkey

- Worked at *Department of Avionics Software* which is responsible for designing and developing a graphical user interface for aircraft.
- Developed an **interface for the unit test** integrated with the specific aircraft's GUI. Developed for acknowledging aircraft's protocol commands. *C/C# are used throughout the project.*

Kadir Has University

Nov. 2021 – June 2022

Research Intern

Istanbul, Turkey

- Worked on dimension reduction methods and graph-based manifold learning algorithms for open-source Sca-ML project supported by TÜBİTAK. “*Developing a New Method Based on Eigenvalue Distribution Slicing and Contour Integral for Manifold Learning and Analysis of Big Data*” project is supervised by Asst. Prof. E. Fatih Yetkin.
- Implemented PETSc/SLEPc Python libraries and library functions added for **solving eigenvalue problems in PCA and SVD dimension reduction** methods.
- scikit-learn, NumPy, Pandas, SciPy, PETSc/SLEPc, Matplotlib, and, Plotly are used throughout the project.*

Argenova

June 2021 – July 2021

Software Engineering Intern

Kocaeli, Turkey

- Developed a **content management system** for the company's blog and project pages. *PHP, JavaScript, jQuery, MySQL, and, CSS are used throughout the project.*

Preprints

- Ege Erdogan, **Unat Teksen**, M. Salih Celiktenyildiz, Alptekin Kupcu, A. Ercument Cicek. “**SplitOut: Out-of-the-Box Training-Hijacking Detection in Split Learning via Outlier Detection**”, 2023; [arXiv:2302.08618](https://arxiv.org/abs/2302.08618). [Under peer-review]
- Ege Erdogan, **Unat Teksen**, M. Salih Celiktenyildiz, Alptekin Kupcu, A. Ercument Cicek. “**Defense Mechanisms Against Training-Hijacking Attacks in Split Learning**”, 2023; [arXiv:2302.08618v1](https://arxiv.org/abs/2302.08618v1).

Honor & Awards

Valedictorian - First Top Ranked Student of the University

July 2023

- Ranked 1st student among the students in Faculty of Engineering & Natural Sciences and university for 8 semesters.

TÜBİTAK Star Scholarship for Undergraduate Research Project

Dec. 2021–June 2022

- Selected by TÜBİTAK (Scientific and Technological Research Council of Turkey) and coordinators of the “Scalable Manifold Learning” research project as an undergraduate scholar for 6 months.

Merit-based Full Scholarship for Bachelor’s Degree Education

Sept. 2018–2023

Professional Activities

1) Reviewer at IEEE T-IFS (IEEE Transactions on Information Forensics and Security)

2) Subreviewer at ESORICS 2023 (European Symposium on Research in Computer Security 2023)

Projects

Title Generator from Abstract with LLM & PEFT (LoRA) | *Transformers, Huggingface, PyTorch, Lora* | [Github](#)

- Fine-tuning of T5 & BART with ArXiv CS-related articles. Training with LoRA, evaluation with rouge-score.

Breast Cancer Detection with CNNs with Multi-view Mammograms | *PyTorch, sk-learn, Pandas, PIL, OpenCV*

- Senior design project is selected as the best design project among 24 projects in the department.

LDA Topic Modeling for Bloomberg News | *Gensim, NLTK, pyLDAvis, Pandas, Numpy* | [Github](#)

JWT CRUD Social Media Platform | *Java SpringBoot, React, MySQL, JWT, Axios, Maven, Bootstrap* | [Github](#)

Personal Blog Management System for Academics | *PHP, MySQL, JavaScript, Bootstrap, CSS* | [Github](#)

Instagram Follower & Following List Scraper | *Python, Selenium, Web Driver Manager* | [Github](#)

Skills & Technical Strengths

Human Languages: Turkish (*native*), English (*fluent*), Italian (*elementary*)

Programming Languages: Python, Java, JavaScript, C/C#, PHP, Matlab, CSS

Machine Learning/Data Science: PyTorch, scikit-learn, NumPy, Pandas, Matplotlib

Web Development: Java Spring, Spring Security 6, React, jQuery, Bootstrap, Maven

Other Technologies/Databases: MySQL, Tkinter, Swing

Typesetting: LaTeX

Certificates & Courses

1) Sequence Models | Issued by Coursera & DeepLearning.AI | [Credential](#)

2) Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization | [Credential](#)

3) Neural Networks and Deep Learning | Issued by Coursera & DeepLearning.AI | [Credential](#)

4) CCNA: Introduction to Networks | Issued by Cisco | [Credential](#)

5) Machine Learning by Stanford University | Issued by Coursera & Stanford University | [Credential](#)

Activities

Social Media Content Creator & Designer at Community of Kadir Has University Social Support & Solidarity

- Designing and creating content specific to regular announcements and events for social media platforms. Volunteering in the organization of charity events.

Updated on January 7, 2024