

Hakan Tugrul Otal

PhD Student and Research Assistant, University at Albany SUNY, New York, United States
hakan.otal@outlook.com — +1 (518) 608-9563 — [linkedin.com/in/hakan-tugrul-otal](https://www.linkedin.com/in/hakan-tugrul-otal)
hakanotal.github.io — github.com/hakanotal — huggingface.co/hotal

RESEARCH INTERESTS

Artificial Intelligence, Machine Learning, Graph Neural Networks, Large Language Models, Computer Networks, Cybersecurity

EDUCATION

University at Albany, SUNY, New York, United States 08-2023 — Present
Ph.D. in Information Science
Data Analytics (Major) - Cybersecurity (Minor)

Istanbul Technical University, Istanbul, Turkey 09-2018 — 06-2023
B.S. in Computer Science GPA: 3.5/4.0

EXPERIENCE

University at Albany, SUNY New York, United States
Research Assistant 08-2023 — Present

- Research Assistant at "AI in Complex Systems Lab" under the guidance of Dr. M. Abdullah Canbaz

Parieta AI Istanbul, Turkey
Software Engineer 01-2023 — 08-2023

- Designed and developed user interface (UI) of the web application.
- Created and connected Nest.js backend services and MongoDB databases.
- Generated AI pipelines and integrated to the application.
- Setup AWS and Docker container infrastructures to manage the projects.

Deka Technology Istanbul, Turkey
Software Engineer 07-2022 — 12-2022

- Developed new API endpoints for many applications of AnadoluEfes.
- Connected SAP services to backend services through customized integration layer.
- Worked with 100+ microservices and used technologies like Jenkins, Openshift, Elastic, Redis, Quarkus, Apache Camel and Keycloak to manage them.

PoiLabs Istanbul, Turkey
Software Engineer Intern 09-2021 — 10-2021

- Developed backend services of an mobile application for visually impaired people.
- Tested and restructured an application's mobile API with more dynamic and efficient ways.
- Used Bitbucket as VCS and observed how to work with many people on the same project effectively.

PROJECTS & PUBLICATIONS

- [1] Hao Jian Huang, Bekzod Iskandarov, Mizanur Rahman, Hakan T Otal, and M Abdullah Canbaz. Federated learning in adversarial environments: Testbed design and poisoning resilience in cybersecurity. *arXiv preprint arXiv:2409.09794*, 2024.
 - [2] Hakan T Otal and M Abdullah Canbaz. Ai-powered crisis response: Streamlining emergency management with llms. In *2024 IEEE World Forum on Public Safety Technology (WFPST)*, pages 104–107. IEEE, 2024.
 - [3] Hakan T Otal and M Abdullah Canbaz. Llm honeypot: Leveraging large language models as advanced interactive honeypot systems. *arXiv preprint arXiv:2409.08234*, 2024.
 - [4] Hakan T Otal, Stephen V Faraone, and M Abdullah Canbaz. A new perspective on adhd research: Knowledge graph construction with llms and network based insights. *arXiv preprint arXiv:2409.12853*, 2024.
 - [5] Hakan T Otal, Eric Stern, and M Abdullah Canbaz. Llm-assisted crisis management: Building advanced llm platforms for effective emergency response and public collaboration. In *2024 IEEE Conference on Artificial Intelligence (CAI)*, pages 851–859. IEEE, 2024.
 - [6] Hakan T Otal, Abdulhamit Subasi, Furkan Kurt, M Abdullah Canbaz, and Yasin Uzun. Analysis of gene regulatory networks from gene expression using graph neural networks. *arXiv preprint arXiv:2409.13664*, 2024.
 - [7] Hakan T Otal, Elyse Zavar, Sherri B Binder, Alex Greer, and M Abdullah Canbaz. Harnessing deep learning and satellite imagery for post-buyout land cover mapping. In *2024 IEEE Conference on Artificial Intelligence (CAI)*, pages 665–671. IEEE, 2024.
- B.S. Grad. Project : *Distributed Network Load Generation Software* [2023]
 - B.S. Lab Project: *Trust Based Data Storage for E-Health Systems in IoT* [2021]

SERVICES & AWARDS

IEEE	09-2023 — Present
Student Member	
IEEE CIS	03-2024 — Present
Computational Intelligence Society Member	
University at Albany, SUNY	
Supervisor of Undergraduate Interns at UAlbany Summer Research Program (UASRP)	Summer 2024
Teaching Assistant for 'CINF135: Concepts of AI'	Fall 2024
Teaching Assistant for 'CINF135: Concepts of AI'	Spring 2024
IEEE Computational Intelligence Society	
Student Travel Grant for IEEE CAI 2024	
IEEE Communications Society	
Student Travel Grant for IEEE CNS 2024	
Student Travel Grant for IEEE CNS 2023	
TPC - Reviewer	
IEEE LCN	2024
IEEE INFOCOM	2024
Complex Networks	2024
Complex Networks	2023

TAKEN COURSES

PhD's Courses

- Quantitative Methods
- Statistics with R
- Advanced Python
- Computer Networks
- Applied Machine Learning

Bachelor's Courses

- Analysis of Algorithms I & II
- Artificial Intelligence
- Computer Vision
- Deep Learning
- Computer Security
- Computer Communication Systems

Additional Courses

- Deep Learning for Computer Vision, University of Colorado Boulder, 02-2022

SKILLS

- **Programming:** Python, C/C++, Javascript/Typescript
- **ML Frameworks:** Pytorch, Tensorflow, Sklearn
- **Graph Tools:** Neo4j, Gephi, Networkx, PyG
- **Data Visualization and Manipulation:** Matplotlib, Seaborn, Numpy, Pandas
- **Database Systems:** MongoDB, PostgreSQL, MySQL
- **MLOps:** Docker, Elasticsearch, Redis, AWS

REFERENCES

Dr. M Abdullah Canbaz

Assistant Professor

Department of Information Sciences and Technology

University at Albany SUNY, NY, USA

E-mail: mcanbaz@albany.edu

Scholar Profile: albany.edu/cehc/faculty/m-abdullah-canbaz

Dr. Tolga Ovatman

Associate Professor

Faculty of Computer and Informatics Engineering

Istanbul Technical University, Istanbul, Turkey

E-mail: ovatman@itu.edu.tr

Scholar Profile: akademi.itu.edu.tr/en/ovatman/