

ALI REZA IBRAHIMZADA

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2107 Thomas M. Siebel Center for Computer Science
201 North Goodwin Avenue, Urbana, IL 61801, United States

EDUCATION

University of Illinois Urbana-Champaign

Doctor of Philosophy in Computer Science; GPA: 4.00 / 4.00

Advisor: Reyhaneh Jabbarvand

Illinois, USA

Aug 2022 - May 2027

Marmara University

Bachelor of Science in Computer Engineering; GPA: 3.98 / 4.00

Thesis: Depth Estimation of Stereo Images using Deep Learning

Advisor: Mehmet Kadir Baran

Istanbul, Turkey

Jun 2020 - Jul 2022

Istanbul Sehir University

Bachelor of Science in Computer Science; GPA: 3.96 / 4.00

Istanbul, Turkey

Aug 2018 - Jun 2020

HONORS AND AWARDS

Valedictorian of Class of 2022

Ranked 1st among roughly 1000 graduates in the Engineering Faculty and the Department of Computer Engineering at Marmara University

Sep 2022

Summa Cum Laude (High Honors)

Summa Cum Laude (High Honors) Award for graduating with 3.98 / 4.00 GPA at Marmara University

Sep 2022

Ray Ozzie Computer Science Fellowship

Full tuition waiver and monthly stipend during the first year of PhD program at the University of Illinois Urbana-Champaign

Aug 2022

The Best Senior Graduation Project of the Year

Our project “Depth Estimation of Stereo Images using Deep Learning” has been awarded The Best Graduation Project of the Year by the Department of Computer Engineering at Marmara University

Jun 2022

Academic Achievement Scholarship

100% tuition waiver in accordance with high GPA in 2019-2020, 2020-2021, and 2021-2022 academic years, awarded by Istanbul Sehir University & Marmara University

Jul 2019

Valedictorian of High School

Graduated as the Valedictorian in High School with 3.96/4.00 GPA, awarded by KEN

Jan 2017

PUBLICATIONS

Pre-prints

P1. A. R. Ibrahimzada, Y. Chen, R. Rong, and R. Jabbarvand, “Automated Bug Generation in the era of Large Language Models”, arXiv preprint arXiv:2310.02407 [\[link to full paper\]](#)

P2. R. Pan, **A. R. Ibrahimzada**, R. Krishna, D. Sankar, LP. Wassi, M. Merler, B. Sobolev, R. Pavuluri, S. Sinha, and R. Jabbarvand, “Understanding the Effectiveness of Large Language Models in Code Translation”, arXiv preprint arXiv:2308.03109 [\[link to full paper\]](#)

Conference Publications

- C1. A. R. Ibrahimzada**, Y. Varli, D. Tekinoglu, and R. Jabbarvand, “*Perfect Is the Enemy of Test Oracle*”, The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), Singapore, November 2022
- C2. A. Cakmak, A. R. Ibrahimzada**, S. Arıkan, H. Ayaz, S. Demirkol, D. Sonmez, M. T. Hakan, S. S. Turan, C. Horozoglu, O. Kucukhuseyin, B. Kiran, S. U. Zeybek, M. Baysan, and I. Yaylim, “*Predicting the Predisposition to Colorectal Cancer based on SNP Profiles of Immune Checkpoints Using Supervised Learning Models*”, VII. International Molecular Medicine Congress, Istanbul, Turkey, September 2019

Journal Publications

- J1. A. Cakmak, H. Ayaz, S. Arıkan, A. R. Ibrahimzada**, Ş. Demirkol, D. Sönmez, M. T. Hakan, S. T. Sürmen, C. Horozoğlu, M. B. Doğan, Ö. Küçüküseyin, C. Cacına, B. Kiran, Ü. Zeybek, M. Baysan, and İ. Yaylım, “*Predicting the predisposition to colorectal cancer based on SNP profiles of immune phenotypes using supervised learning models*”, Medical & Biological Engineering & Computing, Springer Berlin Heidelberg, Vol. 61, 243–258, 2023
- J2. G. N. Sohsah, A. R. Ibrahimzada**, H. Ayaz, and A. Cakmak, “*Scalable Classification of Organisms into a Taxonomy Using Hierarchical Supervised Learners*”, Journal of Bioinformatics and Computational Biology, World Scientific Publishing Co., Vol. 18, No. 05, 2020

WORK EXPERIENCE

University of Illinois Urbana-Champaign

Graduate Research Assistant

Illinois, USA

Aug 2022 - Present

- ❖ **LLMs of Code:** Working on interpretable large language models of code for source code generation and understanding under the supervision of Reyhaneh Jabbarvand.

IBM Research

Visiting Scholar

New York, USA

May 2023 - Aug 2023

- ❖ **Code Translation:** Working on applications of LLMs for code translation under the supervision of Saurabh Sinha, Rangeet Pan, Rahul Krishna, Raju Pavuluri, and Reyhaneh Jabbarvand.

University of Illinois Urbana-Champaign

Undergraduate Research Intern

Illinois, USA

May 2021 - Aug 2022

- ❖ **Test Oracle Inference:** Design and development of an interpretable neural model to improve the performance of test oracles under the supervision of Reyhaneh Jabbarvand.
Published in the ACM Joint ESEC/FSE in November 2022

Marmara University

Undergraduate Researcher

Istanbul, Turkey

Jul 2021 - Jul 2022

- ❖ **Depth Perception:** Developing and investigation of an attention-based neural model for estimating depth in stereo images under the supervision of Mehmet Kadir Baran.
Awarded the Best Senior Graduation Project of the Year in June 2022

Istanbul Technical University

Undergraduate Researcher & Research Intern

Istanbul, Turkey

Jun 2020 - Feb 2022

- ❖ **Academic Success:** Designing and implementation of a clustering-based framework for predicting student success in courses under the supervision of Ali Cakmak.
Manuscript under review in IEEE TLT
- ❖ **SARS-Cov-2 Mutation:** Working on deep learning approaches to predict future Covid-19 mutations under the supervision of Ali Cakmak.

Istanbul Sehir University
Undergraduate Researcher

Istanbul, Turkey
Jun 2019 - Jun 2020

- ❖ **2-Step Taxonomy:** Designing hierarchical supervised learners for classification of living organisms under the supervision of Ali Cakmak.
Published in the Journal of Bioinformatics and Computational Biology in October 2020
- ❖ **Colorectal Cancer:** Developing machine learning models for predicting colorectal cancer under the supervision of Ali Cakmak.
Published in the VII. International Molecular Medicine Congress in September 2019
Extended work published in Medical & Biological Engineering & Computing in October 2022

TEACHING EXPERIENCE

Istanbul Sehir University
Undergraduate TA

Istanbul, Turkey
Sep 2019 - Jun 2020

- ❖ **ENGR 101 - Introduction to Programming (Fall 2019):** Teaching, advising, office hours, design and grading assignments of undergraduate freshman students.
- ❖ **ENGR 102 - Programming Practice (Spring 2020):** Teaching, advising, office hours, design and grading assignments of undergraduate freshman students.

SOFTWARE DEVELOPMENT EXPERIENCE

Marmara University
Projects

Istanbul, Turkey
Jun 2020 - July 2022

- ❖ **P2P Chat Application:** We designed and implemented a peer-to-peer chat application for private and group chats using TCP and UDP protocols. Python was mainly used in this project.
- ❖ **Certificiency:** We designed and implemented a peer-to-peer Event Management System which eases the process of event creation, event management, and issuing e-certificates to participants of an event. Flask, Angular JS, MSSQL were mainly used in this project.
- ❖ **Data Labeling System:** We designed and implemented a Data Labeling System for labeling instances of different datasets. Java was mainly used in this project.
- ❖ **Zoom Poll Analyzer:** We designed and implemented a Poll Analysis System for analyzing poll results of Zoom. Python and Scikit Learn were mainly used in this project.

Istanbul Sehir University
Projects

Istanbul, Turkey
Aug 2018 - Jun 2020

- ❖ **Smart Advisor:** Designed and implemented an intelligent web-based agent which uses machine learning to help students predict their letter grades before registering to a course. Flask, MySQL, and Scikit Learn were mainly used in this project.

PROFESSIONAL ACTIVITIES

University of Illinois Urbana-Champaign
Mentoring and Supervising Interns

Illinois, USA
Jun 2022 - Present

- Palak Kotwani (BS, University of Illinois Urbana-Champaign - USA)
- Chung-En Ho (BS, National Taiwan University - Taiwan)
- Yung-Wen Huang (BS, National Taiwan University - Taiwan)
- Eren Polat (BS, Bilkent University - Turkey)
- Lily Yang (BS, University of Waterloo - Canada)

- Ryan Rong (Peddie High School - USA)
- Zelin Wang (BS, Nanjiang University / UC Berkeley - China / USA)

University of Illinois Urbana-Champaign

Summer Research Experience for Undergraduates (REU) participant

Illinois, USA

May 2021 - Aug 2021

GRANTS

Travel Grants

- ❖ ACM SIGSOFT CAPS travel grant to attend ESEC/FSE 2022 in Singapore
- ❖ UIUC CS travel grant to attend ESEC/FSE 2022 in Singapore
- ❖ KEN travel grant to attend QUEST-2015 in Lucknow, India

TALKS

Perfect Is the Enemy of Test Oracle

- ❖ ESEC/FSE 2022, National University of Singapore

November 2022