Burak Yetistiren

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Education

University of California, Los Angeles (UCLA) — Los Angeles, CA, USA
Ph.D. in Computer Science — *September 2023 - Present*

Bilkent University — Ankara, Turkey
B.Sc. in Computer Engineering — *September 2018 - June 2022*

Waseda University — Tokyo, Japan
Exchange Study — *April 2021 - September 2021*

Bilkent University — Ankara, Turkey
Minor in Philosophy — *September 2020 - June 2022*

Research Interests

My research is focused on creating human-in-the-loop systems integrated into the development cycles. These systems aim to reduce both the cognitive load and the time developers spend on post-processing code analysis results compared to the baseline tools. In addition to creating such systems, I am also interested in seeing their empirical effects or those of other existing developer tools in software development activities.

Publications

1. **Burak Yetistiren**, Isik Ozsoy, and Eray Tuzun. 2022. Assessing the quality of GitHub copilot's code generation. In Proceedings of the 18th International Conference on Predictive Models and Data Analytics in Software Engineering (PROMISE 2022). Association for Computing Machinery, New York, NY, USA, 62–71. doi.org/10.1145/3558489.3559072

2. **Burak Yetiştiren**, Işık Özsoy, Miray Ayerdem and Eray Tüzün. 2023. Evaluating the Code Quality of AI-Assisted Code Generation Tools: An Empirical Study on GitHub Copilot, Amazon CodeWhisperer, and ChatGPT. arXiv. doi.org/10.48550/arXiv.2304.10778

3. Mathmut Furkan Gön, **Burak Yetiştiren**, and Eray Tüzün. 2024. Towards Unmasking LGTM Smells in Code Reviews: A Comparative Study of Comment-Free and Commented Reviews. In Proceedings of the 40th International Conference on Software Maintenance and Evolution. doi.org/10.1109/ICSME58944.2024.00025

Invited Talks

1. "Assessing the Quality of GitHub Copilot's Code Generation", invited talk at Microsoft PROSE Team, January 18, 2023.

Conferences/Workshops Attended

1. **OOPSLA '24**: Object-oriented Programming, Systems, Languages, and Applications. Pasadena, CA, USA, October 2024.

2. **ICSME '24**: The 40th International Conference on Software Maintenance and Evolution. Flagstaff, AZ, USA, October 2024. **(paper presentation)**

3. **ESEC/FSE '23**: The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering. San Francisco, CA, USA, December 2023.

4. **MAPS '23**: The 7th Annual Symposium on Machine Programming. San Francisco, CA, USA, December 2023.

5. **PROMISE '22**: 18th International Conference on Predictive Models and Data Analytics in Software Engineering. Singapore, Singapore, November 2022. **(paper presentation)**

6. **ESEC/FSE '22**: The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering. Singapore, Singapore, November 2022.

Experience

Graduate Student Researcher September 2023 – Current
UCLA Samueli School Of Engineering, Department of Computer Science *Los Angeles, CA, USA*

- I am a Graduate Student Researcher at the Software Evolution and Analysis Laboratory (SEAL) directed by Prof. Dr. Miryung Kim. My research focuses on creating human-in-the-loop systems integrated into the development cycles. These systems aim to reduce both the cognitive load and the time developers spend on post-processing code analysis results compared to the baseline tools. In addition to creating such systems, I am also interested in seeing their empirical effects or those of other existing developer tools in software development activities.

Teaching Assistant September 2024 – December 2024
UCLA Samueli School Of Engineering, Department of Computer Science *Los Angeles, CA, USA*

- I worked as a Teaching Assistant for the CS130 Software Engineering course taken mostly by junior and senior undergraduate students majoring in Computer Science at UCLA.

Undergraduate Researcher July 2021 – September 2023
Bilkent University Software Engineering and Data Analytics Research Group (BILSEN) *Ankara, Turkey*

- I worked under the supervision of Asst. Prof. Dr. Eray Tuzun. My research focused on the empirical evaluation of code generation tools like GitHub Copilot, Amazon CodeWhisperer, and ChatGPT, in terms of their code generation accuracies and potential limitations. In that regard, my paper named "Assessing the Quality of GitHub Copilot's Code Generation" was accepted to appear in the "18th International Conference on Predictive Models and Data Analytics in Software Engineering (PROMISE '22)".
- I regularly and systematically reviewed the papers of other members in my lab to find the points to be improved before submission.

Machine Learning & Computer Vision Intern July 2021 – September 2021
ArgosAI Technology *Ankara, Turkey*

- I trained a generative adversarial network with the images captured in one airport to generate images that can be used as training data for another airport. I utilized the "SPA-GAN: Spatial Attention GAN (Generative Adversarial Networks) for Image-to-Image Translation" architecture in my model.

Software Development Intern June 2021 – July 2021
JotForm Inc. *Ankara, Turkey*

- I developed two React.js web applications: a to-do list with drag-and-drop and real-time updates, and a form handler that collects and displays submission data. I utilized Redux for state management.

Machine Learning Intern July 2020 – August 2020
Bilkent University *Ankara, Turkey*

- I implemented a deep learning model, which predicts COVID-19 negative and positive cases with 70% precision using lung CT scans. I worked under the supervision of Prof. Dr. Cigdem Gunduz-Demir.

Service

Student Volunteer October 2024
NSF

- Provided help with tasks like registration and technical support during the sessions, assisting the session chairs during the 40th International Conference on Software Maintenance and Evolution (ICSME '24).

Awards

NSF Student Travel Award October 2024
NSF

- Support to attend ICSME'24 sponsored by NSF.

NSF Student Travel Award December 2023
NSF

- Support to attend The 7th Annual Symposium on Machine Programming (MAPS) sponsored by NSF.

SIGSOFT CAPS Award September 2022
ACM

- Support to attend the ESEC/FSE'22 and PROMISE'22 conferences sponsored by ACM SIGSOFT.

Honor Student (*Cum Laude*) June 2022
Bilkent University

- I earned my B.Sc. in Computer Engineering degree with *Cum Laude* standing.

Projects

Rhapso | *Technologies used: Java, Android Studio* September 2021 – May 2022
- **Capstone Project**
- Online closet service
- Shopping suggestions considering already existing clothes of the user, suggesting environmentally sustainable alternatives.

Airline Customer Satisfaction Predictor | *Technologies used: Python* February 2021 – May 2022
- Project for **EEE485, Statistical Learning and Data Analytics** course
- Implemented a system that predicts the customer satisfaction for given parameters like Gender, Customer Type, Age, etc.
- Used and compared ML Techniques: Principal Component Analysis, Naive Bayes, Neural Networks, Random Forests

Annexation Game | *Technologies used: Java, JavaFX* September 2020 – December 2020
- Project for **CS319, Object Oriented Software Engineering** course
- Implemented classical RISK board game with new features.

Turna | *Technologies used: C* September 2020 – November 2020
- Project for **CS315, Programming Languages** course
- Designed a programming language for drones.
- Implemented lexical analyzer and parser for the language.

SwapSwop | *Technologies used: Java* February 2019 – May 2019
- Project for **CS102, Algorithms and Programming** course
- Allowed users to post their items and the tasks they can swap.

Skills and Abilities

Natural Languages: Turkish (Native), English (*CEFR Level:* C1, Full-Professional Proficiency), German (*CEFR Level:* C1, Professional Working Proficiency), Japanese (Elementary)
Programming Languages: Python, Java, C++, JavaScript
Developer Tools: Git, GitHub, GitHub Copilot, OpenAI API
Applications: Visual Studio IDE, Android Studio, IntelliJ IDEA, PyCharm IDE, Microsoft Office, LaTeX

Certificates

TOEFL iBT English Proficiency Test November 2021
ETS
- Reading: 28/30, Listening: 29/30, Speaking: 23/30, Writing: 28/30, Total: 108/120

German Language Proficiency Certificate May 2018
Federal Office of Administration
- Level: C1

Community & Extracurricular Activities

Grader September 2021 – January 2022
Bilkent University *Ankara, Turkey*
- Graded quizzes of mostly first-year students for the Introduction to Calculus (MATH101) course, which I have taken in my first year.

Volunteer February 2019 – June 2019
Bilkent Social Awareness Projects (TDP) *Ankara, Turkey*
- The Sun Rises from the Village Project (GUNKOY): Visited a village primary school in Tasova, Amasya, Turkey, to provide some schools needing a library by building one. Made some fun activities for the kids. Collected donations to be delivered to the village school before the visit.
- Railway Line Support Project (DHDP): Visited a village middle school in Dursunbey, Balıkesir, Turkey, to conduct science, arts, and sports activities. Informed the kids about the education opportunities they have for their future. I was the head of the periodic table team in this project. With my team, we collected supplies for a permanent periodic table construction for the science lab, and we constructed the table.

Hobbies and Interests

Travelling: Visited USA, UK, Germany, France, Switzerland, Austria, Italy, Hungary, Tanzania, Kyrgyzstan, Thailand, China, Hong Kong, Japan, Malaysia, South Korea, Singapore, and my homeland Turkey.
Classical Music: I like to go to live classical music performances. Visit my YouTube channel to see some live performances I recorded.