

Bartu Atabek

COGNITIVE RESEARCHER | HI DESIGNER | SOFTWARE ENGINEER

Department of Cognitive Science, METU

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Education

Master of Science - M.Sc. in Cognitive Science, Middle East Technical University

- Thesis: Enhancing Brain Computer Interfaces through Textural Steady State Motion Visually Evoked Potentials *Oct 2021 - present*
- Under the supervision of [Assoc. Prof. Dr. Murat Perit Cakir](#)
- Related Coursework: Research Methods and Statistics for Cognitive Science, Collective Intelligence, Cognition and Machine Learning, Cognitive Neurophysiology

Bachelor of Science - B.Sc. in Computer Engineering, Bilkent University

- Graduation Project: **Nowhere** - Multiple Award Winning Senior Design Project & iOS Application *Sep 2016 - June 2020*
- Related Coursework: Computer Networks, Image Analysis, Parallel Computing, Application Lifecycle Management, Cloud Computing and Mobile Applications, Interface Design Studio, Introduction to Psychology

Research Experience

Researcher - HUMATE Lab, METU Graduate School of Informatics

- Focused research on visual cognition, neuroscience and psychophysics of vision and visually evoked potentials. *Mar 2023 - present*
- Designed experiment pipelines on **Psychopy** utilizing **Neuroelectrics EEG** and **SR Research EyeLink** eye tracker devices.
- Developed and implemented analysis pipelines in python using **MNE**.

Researcher & Project Specialist - METU-TAF MODSIMMER

- Conducted research on pilot cognitive workload, integrating neurophysiological and simulator data to optimize pilot training. *Mar 2023 - present*
- Managed neurophysiological data collection from **150+** Air Force cadets, assembling and configuring **EEG, ECG, VR, and GSR** systems.
- Supported the development of hypoxia prediction algorithm by analyzing in-flight air quality data and comparing it to baseline measurements during both normal and hypoxic conditions.

Researcher - BILSEN Research Group

- Led research in code review tools at Bilkent University's Software Engineering and Data Analytics Research Group *Sep 2020 - Jul 2021*
- Designed and developed a node based visual code review tool to improve code analysis on pull requests.
- Provided expertise in HCI and related areas.

Professional Experience

Software & Product Engineer II, Mavvi

- Innovated by devising prototypes and design systems for cutting-edge web3 applications, primarily **"talently.app"**. *Mar 2023 - May 2023*
- Orchestrated the architecture of Next.js applications, spearheading the implementation of interface components with React, TypeScript, and Tailwind CSS.

Software & Product Engineer, Mavvi

- Joined the San Francisco based company as their founding engineer. *Mar 2022 - Feb 2023*
- Led mobile-first web app design using React, Next.js, and Tailwind, prioritizing user experience.
- Constructed robust backends with Python, Fast API, and Postgres SQL for optimal application functionality.
- Integrated technical expertise with user-centric design principles, ensuring harmonious solutions.
- Orchestrated end-to-end web3 solutions to address evolving technological needs.

Software Engineer, MilSOFT Software Technologies

- Designed and maintained Tactical Data Link Systems, enabling real-time data exchange using C++ and distributed DDS. *Feb 2021 - Mar. 2022*
- Led modernization of legacy systems with upgrades, language enhancements, and architectural revisions.
- Applied Scaled Agile Framework (SAFe) and Jira, contributing to 10+ contract projects and 4 successful deliveries with CMMI 5 standards.

Projects

A full list of releases, demos, and source codes of my projects and papers can be found on my [website](#).

Neverwhere

- Lead a team of 4 engineers, responsible for product management, design and iOS implementation.
- Spearheaded the development of core features, i.e. AR moments, memories, auth.
- Maintaining scalable databases, clustering algorithms, and UI/UX features implemented in Swift and TypeScript.

Jan 2019 - Jun 2020

Publications

- **B. Atabek**, E. Yilmaz, M. P. Cakir, "A Novel Grating Based High-Frequency Motion Stimulus Paradigm for Steady-State Motion Visual Evoked Potential" in *IEEE Transactions on Pattern Analysis and Machine Intelligence (Under review)*, 2023

Conferences & Presentations

2023 **4th METU Open Research Day**, Poster Presentation for Thesis Work

Contributions

Psychopy & Psychopy Vision Toolbox

- Open source code contributions to Psychopy & Psychopy Vision Science repositories.

Skills

Cognitive Sciences	Visual Cogniton, Cognitive Neuroscience, EEG, ECG, GSR, Eye Tracking, fNIRs, LSL, MNE, Psychopy
Industry Knowledge	OOP, UX Research & HI Design, RDBMS, Scrum, Presentations, Computer Vision, Leadership, Full-Stack Development, RESTful APIs, UML, Pitching, web3
Programming Languages	Swift, Java, JavaScript, Python, C/C++, TypeScript, MATLAB, SQL, LaTeX
Libraries & Frameworks	SwiftUI, react, Next.js, GraphQL, SpringBoot, Maven, JavaFX
Tools & Platforms	Firebase, AWS, GCP, Vercel, Docker
Design	Sketch, Figma, Framer, Adobe CC
Languages	English, French, Turkish

Achievements

- 2020 **Visual Designer Award - CSFair'20**, Given to the student with the highest ability to produce nice-looking, smooth, user-friendly, and state-of-the-art graphical user interfaces.
- 2020 **Wide Impact Project Award - CSFair'20**, Awarded to my senior design project *Neverwhere* for the project that reaches the widest audience.
- 2019 **1st Place in Elevator Pitch - 13th Ankara Startup Battlefield**, Took 1st place in the Elevator Pitch category and won a secondary award to participate in the İş Bank's Workup program.