# Arghavan Aslani

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## EDUCATION

**B.Sc. in Electrical Engineering, University of Tehran, Tehran, Iran**  **2017 - 2022**
*Control Systems Focus*

- Thesis: "LiveGaze: Real-Time Visualization of Multi-Source Eye-Tracking Data   [Code Repository](#)
  in an Integrated Application"

## RESEARCH EXPERIENCE

**Crowd Cognition group, Ludwig Maximilians Universität München** —   Apr. 2022 - present
**Research Assistant**
 crowdcognition.net

- Exploratory Data Analysis - Collaboration with Museu do Amanhã, Rio de Janeiro, Brazil
    - Conducted a comprehensive analysis of eye-tracking data and questionnaires to address inquiries from museum stakeholders.
    - Generated detailed reports, which included heatmaps, histograms of specific events from eye-tracking data, and identified meaningful patterns.
    - Managed a team of 5 individuals, overseeing data collection and preprocessing.
- Investigating Variances in Visual Perception with Mobile Eye-Tracking
    - Conducted data collection using the Pupil Invisible eye-tracking device in two conditions: individual and pair.
    - Analyzed collected data with statistical tests, generated heatmaps, and applied various similarity metrics, including SSIM for spatial similarity and DTW for temporal similarity.
- LiveGaze - Real-Time Visualization of Multi-Source Eye-Tracking Data
    - Developed the MVP of the software using Pupil Invisible API, in Flask framework. The objective is to create real-time visualization including heatmaps, from multiple observers.

**ESLAB, University of Tehran** — **Lead Reseach Assistant**          July 2021 - August 2022
 www.linkedin.com/company/eng-sci-lab

— Developed a 2-DOF robot named "Spider-Paint" capable of translating images into drawings on a whiteboard using a marker. (Link to Videos)
— Designed and implemented a control algorithm in C to operate two stepper motors on a vertical plane using a single Arduino. (Link to Code)
— Authored a paper accepted at the ISME Conference 2022 by consolidating contributions from various team members.

## PUBLICATIONS

- **Measuring Gaze Scan-Path Similarity Between Observers Using Mobile Eye-Tracking**
  Contributors: **A. Aslani**, D. Gulhan, A. Aliyeva, S. Saeedpour, O. Deroy, B. Bahrami
  Status: Under Preparation

- **Design, Fabrication and Control of 2 DoF Robot in Vertical Plan**
  Authors: **A. Aslani**, E. Maani Miandoab, H. Najafi, H. Bahreininan, M. Hemmati, M. Fakher
  Conference: The 30th Annual International Conference of the Iranian Society of Mechanical Engineers, 2022
  Publisher: https://civilica.com/doc/1468825/

## Work Experience

**CLIC, University of Tehran — Market Analyst**                July 2019 - Sep 2019

— Analyzed the product's Value Propositions, estimated market size, and identified early adopters to pinpoint optimal markets for eye-tracking devices.
— Scheduled and facilitated meetings with potential customers from major companies to understand their needs

## Certifications

**Computational Neuroscience, Neuromatch Academy**                Link to Certificate
**Task-Orienred Course in Data Analysis with Python**             Link to Certificate
**Task-Orienred Course in SQL**                                   Link to Certificate

## Extracurricular Activities

- Member of BTCS (Brain Tech and Cognitive Science Club)
  Contributed to event planning and execution to attract students to the field.

- Performer and Member of Council at Performing Arts Club                Link to Instagram Page

## Technical Skills

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| Data Analysis | Python (Numpy, Pandas, Matplotlib, Seaborn, scikit-learn), SQL (Postgres, MySQL), MATLAB, R |
| Web Development | Python (Flask, Django), HTML5, CSS, JavaScript |
| Operating Systems | Linux(Ubuntu), Windows |
| Tools | Git, Jupyter Notebook, LATEX, Microsoft Office |

## References

- **Dr. Bahador Bahrami** - bahador.bahrami@psy.lmu.de
  Senior Research Scientist, Faculty of Psychology and Educational Sciences, Ludwig Maximilian University, Munich

- **Dr. Ehsan Maani Miandoab** - e.maani@ut.ac.ir
  Assistant Professor, Faculty of Engineering Sciences, College of Engineering, University of Tehran, Iran

- **Prof. Ophelia Deroy** - Ophelia.Deroy@lrz.uni-muenchen.de
  Chair for Philosophy of Mind and Neuroscience, Ludwig Maximilian University, Munich