Haseeb Raza

haseeb.javed715@gmail.com | +36 70 586 6179 | linkedin.com/in/haseebraza715 | haseebraza.netlify.app

Education

BSc in Computer Science **February 2023 – July 2026 (Expected)**
Eötvös Loránd University (ELTE) *Budapest, Hungary*

- **GPA: 4.3/5.0 | Relevant Coursework:** Artificial Intelligence, Machine Learning, Data Science, Algorithms and Data Structures, Computer Architecture and Operating Systems, Programming Languages, Software Engineering, Database Systems

Experience

Research Assistant – Agentic AI for Science **December 2025 – Present**
Agentic Systems Lab, ETH Zurich *Zurich, Switzerland*

- Investigating **LLM-based agentic systems** as co-reviewers in scientific peer review to address scalability, consistency, and accessibility challenges in global scholarly evaluation, contributing to **human–AI collaboration** research.
- Designing **multi-agent review architectures** with explainable reasoning chains to assess manuscript methodology, clarity, and reproducibility across disciplines, ensuring transparency, auditability, and alignment with scientific norms.
- Conducting **benchmark experiments** comparing AI reviewer performance to human expert evaluations, quantifying reliability, bias patterns, and establishing validity thresholds for responsible AI integration.

Research Assistant – AI and Computational Linguistics **Jul 2025 – Present**
ELTE Faculty of Informatics, AI Department (Prof. László Gulyás) *Budapest, Hungary*

- Investigating novel swarm intelligence approaches for document categorization in latent space, comparing **ACOM** with traditional dimensionality reduction methods (PCA, t-SNE) to study spatial clustering in NLP.
- Examining the effectiveness of **LLM-based embeddings** with **BERTopic modeling** for semantic document organization, establishing empirical benchmarks between discrete partitioning and continuous clustering approaches.
- Developing experimental pipeline for cross-algorithm validation of document placement strategies, contributing methodological frameworks for evaluating **swarm-based** dimensionality reduction in high-dimensional semantic spaces.

Research Assistant – Computational Social Science **Sep 2025 – Present**
RC2S2 (Research Center for Computational Social Science), ELTE *Budapest, Hungary*

- Examining **socio-contextual bias in LLM responses** through controlled experiments using **agent profiles** with varying antisemitic attitudes, analyzing how user background influences AI-generated content in sensitive domains.
- Constructing experimental agents from **validated 2021 antisemitism survey data** with **Likert-scaled attitude profiles**, establishing rigorous methods to quantify **bias propagation** across socio-demographic dimensions.
- Comparing AI response patterns across three profile-disclosure conditions AI-generated backgrounds, user self-descriptions, and no-background controls to isolate mechanisms of **algorithmic bias** and inform fairness evaluation practices.

Research Assistant – Biomedical Signal Processing **Aug 2025 – Nov 2025**
ELTE Faculty of Informatics, Numerical Analysis Dept. (Prof. Péter Kovács) *Budapest, Hungary*

- Implementing an autocorrelation-based heart rate estimation method from BCG literature on a novel dataset, validating accelerometer-based cardiac monitoring using finger-worn sensors.
- Developing a Python signal processing pipeline with Butterworth filtering, peak detection, and quality metrics (skewness, kurtosis) to extract cardiac cycles under motion artifacts.
- Achieving **1.88 bpm mean absolute error** against ECG reference with **93.3% accuracy within ±5 bpm**, demonstrating robustness across datasets and sensor configurations.

Founder & President, ELTE Data Science Club **Sep 2025 – Present**
ELTE Faculty of Informatics *Budapest, Hungary*

- Founded a student research organization, expanding membership to **50+ participants** across disciplines through strategic programming and faculty collaboration.
- Designing and delivering **technical workshops** on ML/AI methods, research tools, and collaborative coding, while coordinating an **invited speaker series**.
- Establishing **peer mentorship** and **project-based learning frameworks** connecting undergraduate researchers to applied problems and interdisciplinary collaboration.

Teaching Experience

Senior Student Mentor **Sep 2025 – Present**
ELTE Faculty of Informatics *Budapest, Hungary*

- Co-instructing **Master's Preparation courses** for cohort of **25 first-year graduate students**, developing curriculum on academic skills, study strategies, and research methodology foundations.
- Delivering **weekly interactive workshops** addressing learning strategies, time management, academic writing, research methods, and computer science study skills tailored to international student needs.
- Providing **ongoing academic mentorship and individual consultations** supporting international students' cultural adaptation, university navigation, and successful integration into Hungarian higher education system.
- Collaborating with faculty on **student support programming and retention initiatives**, serving as accessible first point of contact for academic, administrative, and life-adjustment questions.

Lab Instructor & Teaching Assistant **Spring 2026 (Scheduled)**
ELTE Faculty of Informatics *Budapest, Hungary*

- Scheduled to lead **laboratory sections** for **Operating Systems** and **Data Structures & Algorithms** courses, facilitating hands-on programming exercises, algorithm implementation, and system-level debugging.
- Conducting **weekly office hours and individual consultations** to support conceptual understanding, debugging assistance, and programming skill development across undergraduate technical coursework.
- Responsible for **grading programming assignments, lab reports, and practical exams**, providing detailed feedback on code quality, algorithm efficiency, documentation, and computational thinking.

Research Competencies & Technical Skills

Research Areas: Data science and machine learning, Agentic AI systems, Natural language processing, Human–AI interaction, Algorithmic fairness, Computational social science, Biomedical signal processing

AI/ML Methods: Large language models, Multi-agent systems, Retrieval-augmented generation (RAG), Topic modeling (BERTopic), Embedding-based semantic analysis, Swarm intelligence, Model evaluation

Programming & Tools: Python (NumPy, SciPy, Pandas, scikit-learn), Java, SQL, Git, LaTeX, Jupyter, Docker, Linux/Bash, HuggingFace, LlamaIndex, DSPy

Research Communication: Technical writing, academic presentations, documentation, peer collaboration, student mentorship

References

Prof. László Gulyás
Dept. of Artificial Intelligence, ELTE
lgulyas@inf.elte.hu

Prof. Gergely Bencsik
Dept. of Data Science, ELTE
bg@inf.elte.hu

Dr. Itilekha Podder
Dept. of Data Science, ELTE
itilekha19@inf.elte.hu

Prof. Péter Kovács
Faculty of Informatics, ELTE
kovika@inf.elte.hu

Honors & Awards

Stipendium Hungaricum Scholarship **2022–2025**
Hungarian Government, Full tuition and living stipend for BSc studies *ELTE, Hungary*

PEEF Merit Scholarship **2021**
Punjab Educational Endowment Fund, Government of Pakistan *Top national performance*

Languages

English: Fluent (professional working proficiency)
Urdu: Native
Punjabi: Native
Hungarian: Basic (A1-A2)