

SINA BERK GOLECH, BSC

+49-162-1391348 | sigoooo04@stud.uni-saarland.de | [LinkedIn](#), [GitHub](#): [sinaberkgolech](#) | Saarbrücken, Germany



SKILLS/CAPABILITIES/EXPERTISE

Programming Languages: Python(Numpy, Pandas, Seaborn, Plotly, sklearn, PyTorch), R(Bioconductor, affy, progeny, speed2, pheatmap), Bash C, C++, Java, Perl, MATLAB, SQL, UML

Soft Skills: Writing, Project Management, Public Speaking, Leadership, Scrum, Agile

Languages: English: Professional proficiency, Turkish: Native, German: Beginner

Tools: Linux, Git, GitHub, TeX, Visual Studio, PyCharm, MS Word, Excel, PP, Canva, Trello

SUMMARY

- Interdisciplinary scientist with skills and experience in bioinformatics, data analytics, research, and molecular biology
- Collaborated on research projects, resulting in 1 conference publication, and wrote 2 BSc theses with state-of-the-art technologies
- Engaged in understanding genomic and transcriptomic data analysis and visualization
- Self-motivated, problem-solving, and collaborative scientist with good communication skills
- Looking to contribute to the use of computational methods to push forward Microbiome Analysis projects

EDUCATION

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| • MSc, Bioinformatics, Universität des Saarlandes (Saarland University) | Oct 2023 to Sep 2025 |
| • BSc, Genetics and Bioengineering, Istanbul Bilgi University (DM) | Sep 2019 to Sep 2023 |
| • BSc, Computer Engineering, Istanbul Bilgi University (Main Major) | Sep 2018 to Jan 2023 |

WORK EXPERIENCE

Istanbul Bilgi University

Research Assistant

Genetics and Bioengineering Department

May 2022 to May 2023

- Focused on data analysis of adults with Philadelphia chromosome-like acute lymphoblastic leukaemia, data mining procedures applied to various datasets to analyze transcriptomic profiles, metabolic activities, and classification of patients with a diverse subgroup of diseases.
- The analyses were conducted in silico with R and Python programming languages with affy, progeny, speed2, and pheatmap.
- Responsible for data preprocessing, and processing, the project reinforced my bioinformatics knowledge and data-analyzing abilities.

Istanbul Bilgi University

Research Assistant

Computer Engineering Department

March 2020 to March 2022

- The Primary project focused on developing a Turkish image caption dataset with well-known image captioning models and proposing to the research community a benchmark image-caption dataset.
- Used computational methods to develop automatic image captioning generators and models for English and Turkish languages.
- These projects led to the submission of 1 conference publication and presentation; the Computer Engineering thesis was conducted through this project and published a paper in IEEEExplore.
- Distributing tasks for the internship members consisting of thirty people, creating jobs, and providing the organization and administration of the database containing the images and the corresponding descriptions using MongoDB.

RESEARCH EXPERIENCE

Istanbul Bilgi University

Senior Design Project/Thesis

Genetics and Bioengineering Department

July 2022 to July 2023

- Thesis entitled "Identification of antimicrobial peptides (AMP) from human gut microbiome and investigation of their therapeutic potential in gastrointestinal disorders using deep learning".
- The project covers Inflammatory Bowel Disease, Irritable Bowel Syndrome, Celiac Disease, Crohn's disease, and Ulcerative Colitis.
- Constructed a best-practice pipeline for microbiome analysis, including identifying AMPs via state-of-the-art technologies.
- Data collected from various databases consisting of the metagenome, metatranscriptome, metaproteome, AMPs, and non-AMPs.
- The study expands the contemporary dataset with up-to-date data and state-of-the-art deep neural network architectures. The workflow consists of two main parts: (1) Identification of AMP and (2) Microbiome analysis.

CONFERENCE PRESENTATION AND PUBLICATION

- **S. B. Golech**, S. B. Karacan, E. B. Sönmez, and H. Ayral, "A complete human-verified Turkish caption dataset for MS COCO and performance evaluation with well-known image caption models trained against it," 2022 International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME), Maldives, Maldives, 2022, pp. 1-6, doi: 10.1109/ICECCME55909.2022.9988025.

TEACHING AND MENTORING EXPERIENCE

- 2021-2023 -Nesin Villages Algebra and Computer Programming - Teaching assistant: Every summer Nesin Villages organizes this summer school to teach high school students about algebra and computer programming with DrRacket programming language.