

SINA BERK GOLECH, BSC

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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

- 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 *slic*o 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. Ayril, "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.