

# SİNEM SARAÇ

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## EDUCATION

For more details, visit my [GitHub](#)

### Bilkent University

Faculty of Science, Department of Molecular Biology and Genetics

Sep 2021 – Jun 2025

Ankara, Turkey

- **BSc in Molecular Biology and Genetics**, graduated with Honors for a GPA of 3.20/4.00
- Merit scholarship student for being in the top 1% of the National University Exam (YKS) entrants, awarded by TUBITAK (The Scientific and Technological Research Council of Türkiye)
- Earned High Honor status in Fall 2023 and Spring 2024, and Honor status in Spring 2023 and Fall 2024 for high semester GPA
- **Relevant Coursework:** Genetics, Immunology, Microbiology, Physiology, Genetics and Biology of Cancer, Molecular Biology of the Cell I & II, Molecular Biology of the Gene, Developmental Biology, Molecular Genetics, Experimental Approaches in Molecular and Cellular Biology, Introduction to Bioinformatics, Introduction to Cellular and Molecular Biology of the Brain, Biochemistry I & II, Introduction to Programming in Python, Statistical Methodology, Science and Ethics, Professional Communication
- **Select Works:**
  - **MBG 491 Senior Project:** Did a research internship at a laboratory in Bilkent University between January and May 2024, detailed below under the Experience heading
  - **MBG 489 Genetics and Biology of Cancer:** Presentation on the reversible and adaptive resistance to BRAF(V600E) inhibition in melanoma
  - **MBG 483 Developmental Biology:** Group presentation on “An ancient defense system eliminates unfit cells from developing tissues during cell competition”
  - **MBG 466 Introduction to Cellular and Molecular Biology of the Brain:** Presentation on the distinct subtypes of proprioceptive dorsal root ganglion neurons that regulate adaptive proprioception in mice
  - **MBG 416 Science and Ethics:** 6-person project on “Human Experimentation & Ethical Concerns”

### Bahcesehir Atakum Science and Technology High School

Science-Math Concentration, GPA 99.34/100

Sep 2017 – Jul 2021

Samsun, Turkey

## EXPERIENCE

### Hacettepe University: Esendagli Laboratory

Intern

Ongoing

Ankara, Turkey

- Assist in experimental design, data collection, protocol optimization in molecular biology and cellular assays, processing, and analysis of biological samples
- Learn and refine experimental techniques such as flow Cytometry and cell sorting, enzyme-linked immunosorbent assay (ELISA), fluorescence microscopy, qRT and RT polymerase chain reaction (PCR), western blotting, cell viability and death assays, molecular cloning, and in vivo imaging technology

### Max Planck Institute of Molecular Physiology

Intern

Jul – Sep 2024

Dortmund, Germany

- Worked with the [Peng Wu Group](#), led by Dr Peng Wu, to research protein-RNA interactions and post-transcriptional modulations
- Tested the effectiveness of PROTAC class drugs, designed and produced in the laboratory for the treatment of acute myeloid leukemia (AML), by applying them at different concentrations on the Mono-Mac-6 cell line using the western blotting and electrophoretic mobility shift assay (EMSA) methods
- Travelled to Germany via Erasmus+ and TUBITAK-2224D scholarships

## Bilkent University

Intern

**Jan – May 2024**

Ankara, Turkey

- Assisted with literature review and experiment design to test samples taken from patients with amyotrophic lateral sclerosis (ALS) caused by hexanucleotide repeat expansion in intron 1 with PCR primers designed at our laboratory as my senior project at Bilkent University
- Learned about and refined techniques in DNA isolation and purification, isolation of peripheral blood mononuclear cells (PBMC) from blood, PCR, gel electrophoresis, and primer design and applied these methods to cloning of TPCN1 gene and other ongoing projects and collaborations

## Bilkent University UNAM (National Nanotechnology Research Center)

Intern

**Apr – Sep 2023**

Ankara, Turkey

- Assisted with experiments of an already ongoing project concerning the relation between ALCAM/CD166 antigen and brain aging using methods like western blotting and siRNA transfection at the [Arslan-Ergul Lab](#)
- Gained experience in writing project and funding proposals for scientific experiments

## Private Viomed Laboratories

Intern

**Aug 2021**

Ankara, Turkey

- Categorized blood and swab samples coming for screening for viral diseases, prepared samples for screening for experiments, and learned about the techniques of PCR and DNA isolation

## **ACADEMIC ENRICHMENT**

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### HarvardX: Statistical Inference and Modeling for High-throughput Experiments

- Gain expertise in advanced statistical methods, including error rate control, false discovery rates, parametric distributions, maximum likelihood estimation, hierarchical models, and empirical Bayes, with applications in high-throughput biological data analysis and applied concepts through R programming, integrating statistical modeling with practical case studies in next-generation sequencing and microarray data

## **EXTRACURRICULAR ACTIVITIES**

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### **Organizer for the Bilkent Genetics Society**

**2022 – 2023**

- Handled communications between event guests, speakers, and attendees, and planned event schedules
- Organized the online 13<sup>th</sup> Annual Horizons in Molecular Biology and Genetics Symposium in May 2023 and coordinated with Bilkent Psychology Society to organize the 10<sup>th</sup> Annual Neuroscience Days in December 2022

## **SKILLS AND HOBBIES**

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| <b>Lab Skills</b> | Flow Cytometry, Western Blotting, Cell culture maintenance, PCR, PBMC Isolation from Blood, Agarose Gel Electrophoresis, Primer Design, EMSA Cloning and Isolating DNA, Site Directed Mutagenesis, RNA Isolation, siRNA knockdown |
| <b>Technical:</b> | FlowJo, Python (Intermediate), R (Intermediate),  |
| <b>Language:</b>  | Turkish (Native), English (Advanced, TOEFL 118/120, Oct 2024), German (B1)  |
| <b>Interests:</b> | Traditional media painting (acrylic, oil, and water)  |