

## EDUCATION

2023 - 2026	<b>MSc Computer Engineering</b> , Bilkent University, Turkey (MGPA : 3.56/4.00)
2016-2022	<b>BSc Mathematics</b> (double major), Honors, Bilkent University, Turkey (CGPA : 3.32/4.00)
2015-2022	<b>BSc Computer Engineering</b> , High Honors, Bilkent University, Turkey (CGPA : 3.68/4.00) (Received comprehensive scholarship due to ranking in top 70 out of 2.1 million applicants in the university entrance exam)
2011-2015	<b>Science High School Diploma</b> , İzmir Özel Türk Science High School, Turkey (CGPA : 96.65/100) (Received tuition waiver due to ranking in top 3200 out of 2 million applicants in the high school entrance exam)

## RESEARCH EXPERIENCE

September 2022 Present	<b>Project Engineer, DEPARTMENT OF COMPUTER ENGINEERING, BILKENT UNIVERSITY,</b> <ul style="list-style-type: none"><li>&gt; Designed and scoped undergraduate research projects, subsequently mentoring students (volunteers and CS490 Introduction to Research course participants) in key areas such as experimental design, methodology, and technical execution.</li><li>&gt; Managed the intake of undergraduate volunteers and assigned them to research projects matching their skills and interests.</li><li>&gt; Designed and executed a custom 4-week research preview for an undergraduate intern to simulate the scope and workflow of graduate-level research.</li><li>&gt; Helped write project deliverables for BioPIM, a Horizon Europe Project.</li><li>&gt; Took part in various bioinformatics projects, including indexing of genomic datasets, whole genome alignment, and characterization of alignment algorithms.</li></ul>
June 2021 September 2021	<b>MATH 291 Summer Project, BILKENT UNIVERSITY,</b> <ul style="list-style-type: none"><li>&gt; Studied the foundations of quantum computation and reproduced the proof of quantum contextuality using the CHSH inequality.</li></ul>
July 2019 September 2019	<b>Research Intern, MARYLAND CYBERSECURITY CENTER, UNIVERSITY OF MARYLAND,</b> <ul style="list-style-type: none"><li>&gt; Conducted analysis on how poisoning attacks on neural networks affect a specific data point using influence functions and representer points.</li></ul>
September 2018 January 2019	<b>Undergraduate Researcher , IVIS LAB, BILKENT UNIVERSITY,</b> <ul style="list-style-type: none"><li>&gt; Implemented high-dimensional embedding with principal component analysis to apply to compound graphs, reducing the time complexity of rendering a graph layout.</li><li>&gt; Extended high-dimensional embedder algorithm to work on graphs with nodes of various sizes.</li><li>&gt; Helped design heuristic algorithms to improve a spring embedder algorithm for compound graphs.</li></ul>
July 2017 September 2017	<b>Research Assistant , BIOINFORMATICS INSTITUTE, A*STAR ,</b> <ul style="list-style-type: none"><li>&gt; Recorded, annotated, and preprocessed a hand gesture recognition dataset using Python and Bash scripts.</li><li>&gt; Debugged labeling software written in C++ with Qt, which increased the accuracy of labeling.</li><li>&gt; Developed a 3D drone simulator using OpenGL in Python. Connected the simulator to hand gesture detection software.</li></ul>

## INDUSTRY EXPERIENCE

December 2021 March 2022	<b>Data Management - Translations Intern (Remote) , PEOPLE-ANALYTIX AG,</b> <ul style="list-style-type: none"><li>&gt; Translated their Digital Career Advisor product from English/German to Turkish.</li></ul>
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June 2021 September 2021	<b>Frontend Intern (Remote), NTT DATA,</b> <ul style="list-style-type: none"> <li>➤ Replicated the frontend of Seç Market's internal stock inquiry platform.</li> <li>➤ Followed HTML, CSS, JavaScript, and React courses on Udemy.</li> </ul>
August 2018 October 2018	<b>Natural Language Processing Intern, DATABOSS SECURITY &amp; ANALYTICS,</b> <ul style="list-style-type: none"> <li>➤ Implemented a lexical analyzer to improve the tagging accuracy of the NLP pipeline by minimizing false negatives.</li> <li>➤ Utilized SCRUM in Agile Development, reviewed peers' codes for completeness and compared against quality standards.</li> </ul>

## TEACHING EXPERIENCE

September 2023 Present	<b>Grader, BILKENT UNIVERSITY,</b> <ul style="list-style-type: none"> <li>➤ Prepared and graded quizzes for CS 481/CS583 Bioinformatics Algorithms (senior and graduate level course) for 2 semesters and CS476 Automata Theory and Formal Languages (senior course) for 3 semesters.</li> </ul>
October 2017 December 2017	<b>Lab Tutor, BILKENT UNIVERSITY,</b> <ul style="list-style-type: none"> <li>➤ Tutored students on their lab assignments for CS 223 Digital Design and CS 102 Algorithms &amp; Programming II courses.</li> </ul>
August 2014 October 2015	<b>Private Tutor, FREELANCE,</b> <ul style="list-style-type: none"> <li>➤ Taught secondary education level mathematics and natural sciences.</li> </ul>

## PUBLICATIONS AND PREPRINTS

3. **Pairwise Whole Genome Alignment using Locally Consistent Parsing** (MS (Master of Science)). Ecem Ilgun ( Expected by Jan 2026). Bilkent University.
2. **GenCore : Genomic distance estimation using Locally Consistent Parsing.** Akmuhammet Ashyralyev, Salem Malikic, S. Cenk Sahinalp, Can Alkan, Ege Şirvan and Ecem Ilgun. Submitted to *RECOMB* (2026). *Under review*
1. **Robust software development practices improve citations of RNA-seq tools.** Sanskruti Sharma, Ecem Ilgun, Tuna Okcu, Vladyslav Ostash, Vitalina Bashynska, Can Alkan, Elisha Myoung, Naznin Nahar Alpana, Karishma Chhugani, Dhrithi Deshpande, Alex AT Bui, Kyle Ellrott, Olga Burduniuc, Tatiana V Tatarinova, Viorel Munteanu, Pawel P Labaj, Dumitru Ciorba, Viorel Bostan, Mihai Dimian, Matteo Pellegrini, Mohammed Alser and Serghei Mangul. Submitted to *GigaScience* 2026. *Under review*.  
[doi : 10.1101/2022.08.24.505188](https://doi.org/10.1101/2022.08.24.505188)

## POSTERS

1. **Characterization of Alignment and Search Algorithms for Short Reads, Long Reads and Graph Mappers.** Ecem Ilgun\*, Ömer Yavuz Öztürk\*, Klea Zambaku\*, Juan Gómez Luna, Mohammed Alser, Ricardo Roman-Brenes, the BioPIM Project, and Can Alkan. *RECOMB* (2023).

[\* \*These authors contributed equally to this work.\*]

## ONGOING RESEARCH PROJECTS

2025-Present	<b>r-indexing of Locally Consistent Parsing (LCP) Cores.</b> Mentoring Ata Soykal with Ali Erdem Karaçay.
2025-Present	<b>Statistical Analysis of LCP for Uniform Sequences Under Uniform Point Mutation.</b> Mentoring Ege Şirvan with Akmuhammet Ashyralyev.
2024-Present	<b>Efficient Matching of LCP Cores using Prefix-Free Parsing.</b> Mentored Şeymanur Kılıç.
2024-Present	<b>Multiple Sequence Alignment using LCP.</b> Collaborating with Tuna Okçu.
2023-Present	<b>Copy Number Variation Detection Using Transformers and Mamba.</b> Collaborated with Ozan Mütde.
2022-Present	<b>Workload characterization of DNA read mapping algorithms.</b> Collaborating with Berkan Şahin.

## HONORS AND AWARDS

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- 2022 Sabanci University, Computer Science and Engineering PhD Program,  
Admitted to direct PhD program without a MSc. degree, Covering monthly stipend (Declined in favor of MSc. in Bilkent University)
- 2018 Fraunhofer Institute for Integrated Circuits, The International Summer Internship Program,  
Admitted to Research Internship, Covering free housing & monthly stipend (Declined in favor of an internship in Databoss)
- 2018 Google Get Ahead Program, Participant
- 2017 Singapore International Pregraduate Award (SIPGA), 2017 Cohort Awardee  
Covering monthly stipend & Training Employment Pass
- 2017 Tsinghua University, Admitted to Deep Learning Summer School,  
Covering tuition and administrative fees (Declined in favor of SIPGA)
- 2017 Scholarship of TUBITAK (Scientific and Technological Research Council of Turkey),  
Covering monthly stipend (Declined in favor of Scholarship of Turkish Government)
- 2016-2020 Scholarship of Turkish Government, Covering monthly stipend,  
Offered to top 100 ranking students among 2 million candidates in University Entrance Exam
- 2015-2020 Bilkent University, High Honor Certificate
- 2015-2021 Bilkent University, Comprehensive Scholarship,  
Covering tuition & free housing & monthly stipend
- 2015 Nationwide University Entrance Exam (LYS), English Language & Interpretation,  
Ranked 27th among 2 million candidates
- 2015 Nationwide University Entrance Exam (LYS), Natural Sciences & Mathematics,  
Ranked 70th among 2 million candidates

## SERVICE, OUTREACH, AND LEADERSHIP

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- 2023 RECOMB 2023, Volunteer
- 2018-2021 Women Techmakers Community, Member
- 2018-2019 Bilkent University Cinema Society, Treasurer
- 2017- 2018 Bilkent University Cinema Society, Vice President
- 2016- 2017 Bilkent University Cinema Society, Co-founder and President

## LANGUAGES

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- Programming** Python, Java,  $\text{\LaTeX}$ , C/C++
- Natural** Turkish (native), English(fluent), Spanish(elementary), Arabic(beginner)