

Alper Karagöl (he/him/his)

Istanbul- London

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Summary

An exceptionally hard-working and friendly, idealistic fourth-year medical student. Skilled in learning new concepts and generating ideas quickly. Effective at teamwork, works well with a diverse range of team members. Collaborates with other students to bring new perspectives to problems.

Education

**Medical Doctor - Istanbul University Istanbul Medical Faculty, English Medical Program
2018 – 2025**

**English Preparatory Year - İstanbul University, The School of Foreign Languages
2018 – 2019**

High School Degree - Burak Bora Anatolian High School 2014 – 2018
GPA: 94,92/100

Additional courses

2022 Massachusetts Institute of Technology (MIT), Media Lab

Molecular Architecture and Design (MAS.S60 2022 Spring Course) (Virtual)
(Part of the internship)

Experience

Guest Scientist, 2023 January – Present, London, United Kingdom
**Structural Immunology Laboratory and Molecular Interactions Facility, Darwin Building,
University College London**

- Registered as Visitor at the Medical Division, University College London Medical School.
- Working on genetic variant analysis and molecular mechanisms of bleeding disorders on the scope of evolutionarily related coagulation proteins in Homo sapiens (Human)
- Interactive databases for genetic alterations to understand the molecular mechanism of the related diseases.
- Used variant analysis tools, databases, and web servers with MySQL and HTML programming. Collaborated with international researchers.
- Under the supervision of Professor S J Perkins.
<https://www.ucl.ac.uk/biosciences/structural-and-molecular-biology/structural-immunology-group>

Research Intern, 2022 Feb – May; Sep – Present

Lab of Molecular Architecture, Massachusetts Institute of Technology (MIT)

- Remote research internship under the supervision of Dr. Shuguang Zhang. The lab works on the Design of Water-Soluble Variants of Membrane Proteins (the QTY Code)
- Attended Molecular Architecture and Design lectures and designing water- soluble variants of proteins.

- Working on structural and evolutionary biology of neuronal transporters and its water-soluble variants.
- Used structural analysis tools, protein modelling servers, evolutionary profiling, and variant analysis tools. Collaborated with international researchers.
<https://www.moleculararchitecture.org>

Summer Research Intern, 8 Aug 2021 – 4 Sep 2021, Leipzig, Germany
The Liebscher Lab - Rudolf Schönheimer Institute of Biochemistry

- 4-week summer research internship under the supervision of Prof. Dr. med. Ines Liebscher.
- The main research topic is in vitro and in vivo manipulation of this receptor group through derived synthetic peptides.
- Worked on signal transduction of several aGPCRs and a tethered agonist activation mechanism, did transformation in E.coli, PCR for cloning of murine receptors and cell culture analysis.

SDG Coordinator (Istanbul University) Feb 2022 – Current
UN Sustainable Development Solutions Network (SDSN) - Youth

- SDSN Youth is a program of the UN Sustainable Development Solutions Network – an initiative launched by UN Secretary-General, Ban Ki-moon.
- Participated international and regional meetings of the SDG Program, SDSN Youth
- President of the SDG Student Hub İstanbul University, promoted Global Goals for peaceful and inclusive societies.
- Contacted climate activists and human rights advocates for empowering the Global Goals.
- Planned new activities and initiatives on the topic of using scientific thinking to combat climate crisis. Communicated with academics and university board for forming a new student club.

Assistant of Medical Ethics and Human Rights Director 2020- 2021
The European Medical Students' Association İstanbul

- A non-profit, non-governmental organisation representing medical students, the pillar focused mainly on medical ethics and human rights. Webinars about emergency medicine and social media campaigns about gender equality and LGBTIQ+ rights were organized. Worked as a team with other medical students in my faculty.
- Collaborated with academics and medical doctors in İstanbul.

Student Scientific Research Club, Neurology (2020-2022), Endocrinology (2021-) and Plastic Surgery (2022) - Group member

- Attending and making presentations about research topics and recent cases. The student clubs offer a basic training in how research should be conducted.
- Organizing student internship for medical students, communicating with academics, promoting student research and international collaborations.

Research Project Jun 2016 – Jan 2017
BAYER - Turkey High School Science Projects competition

- In silico macromolecule design and competition analysis for treatment of multiple sclerosis. Ligand protein sequences that are targeting a disease-related protein was prepared.
- Designed structures were determined by homology modelling.

	<p style="text-align: center;">Research Project Jun 2016 – Jan 2017 49th TUBITAK (Scientific and Technological Research Council of Turkey) Research Projects competition</p> <ul style="list-style-type: none"> ▪ Molecular modelling and simulations in multiple sclerosis research ▪ The disease was researched using DNA sequence analysis tools and molecular docking analysis, homology modelling was used. <p style="text-align: center;">Research Project Sep 2018 - Nov 2018 Google Science Fair 2018-2019</p> <ul style="list-style-type: none"> ▪ In silico macromolecule design and competition analysis for treatment of multiple sclerosis ▪ The disease was researched using DNA sequence analysis tools and molecular docking analysis, homology modelling was used. <p style="text-align: center;">TÜBİTAK Scientist Assistance Programmes Directorate - The Science Olympiads Programme, Biology Training Camps, Aug - Nov 2018</p> <ul style="list-style-type: none"> ▪ Students who succeed in National Science Olympiads were selected and trained by academics well-regarded in their fields. Students receive intensive and advanced theoretical and practical training in their chosen discipline by working with other students and expert academics from across Turkey. <p style="text-align: center;">High School Biology Olympiad Team Co-leader 2016 -2018</p> <ul style="list-style-type: none"> ▪ In 2017, our high school earned its first National Olympic medal. Participated in competitions and preparation camps.
<p>Volunteer Experience and Advocacies</p>	<p style="text-align: center;">European Union Turkey Youth Climate Forum 26 Oct 2021</p> <ul style="list-style-type: none"> ▪ At the climate forum held in cooperation with the EU Delegation to Turkey, EU Information Centers, and the charity Bilim Virüsü, we tried to offer solutions to the global climate crisis before the Glasgow COP26 summit as 100 young climate advocates selected from various provinces of Turkey. <p style="text-align: center;">The National Youth Environment Assembly of Turkey 27 Feb 2022</p> <ul style="list-style-type: none"> ▪ Delegates discussed climate issues and wrote a report to represent Turkey at the UNEP Global Summit. <p style="text-align: center;">Local Conference of the Youth 02 Oct 2022</p> <ul style="list-style-type: none"> ▪ Local Conference of the Youth is an event under the umbrella of YOUNGO, the official youth constituency of the United Nations Framework Convention on Climate Change. 120 delegates discussed climate and wrote a report to represent the youth of Turkey. <p style="text-align: center;">HASUDER (Association of Public Health Specialist) Student Working Group Member 2021-2022</p> <ul style="list-style-type: none"> ▪ Member of Environmental and Planetary Health Working Group. <p style="text-align: center;">Network Member - Building Turkish Health Sector Capacity for Environmental & Climate Engagement Project funded by EU 2021-2023</p> <ul style="list-style-type: none"> ▪ The project carried out by Health & Environment Alliance (HEAL), HASUDER (Association of Public Health Specialist) and Kocaeli University Public Health Department ▪ Climate Change Working Group (One Health, Biodiversity, Deforestation)

	<p style="text-align: center;">The European Medical Students' Association Turkey - Health Policy Pillar Conflict of Interest Working Group – Member Apr 2020 – Sep 2020</p> <ul style="list-style-type: none"> ▪ Conflict of Interest WG aims to increase the awareness of the issue and to provide important outputs to reduce the biased decisions that may arise as a result of conflicts of interest. ▪ Collaborated with medical faculties to develop a guideline and a social media campaign. <p style="text-align: center;">TurkMISC (Turkish Medical Students' International Committee), National Team on Human Rights and Peace, World Recycling Day SWG Member Jan- March 2021</p> <ul style="list-style-type: none"> ▪ 18 March World Recycling Day Small Working Group aims to carry out studies in line with our ecological and environmental goals, within the scope of zero waste, veganism philosophy, climate action, and the relevant special day. <p style="text-align: center;">The European Medical Students' Association İstanbul - Animal Rights Small Working Group Member 2021-2022</p> <ul style="list-style-type: none"> ▪ Worked with students from Medical Faculty to promote animal rights, collaborated with medical students and academics. <p style="text-align: center;">Istanbul Medical Faculty BIR(I)LIK Student Club - Executive Board Member 2019-2020</p> <ul style="list-style-type: none"> ▪ The student organization focuses mainly on promoting bone marrow donation
Laboratory and Field Skills	<p>Structural biology</p> <ul style="list-style-type: none"> ▪ Molecular Visualization Programs: ChimeraX, Jmol, PyMOL, RasMol ▪ Sequence analysis and bioinformatics tools: RCSB PDB, UniProt, BLAST, Protter, ChimeraX, SynLinker, Verify 3D, ExPASy server, Secondary structure calculation with DSSP ▪ Molecular modeling servers: Swiss Model, Phyre2, AlphaFold2, Rosetta ▪ Docking programs and servers: ClusPro, Rosetta ROSIE, AutoDock Vina ▪ Evolutionary analyses: ConSurf Server <p>Genetics</p> <ul style="list-style-type: none"> ▪ Genome Databases: GnomAD, ClinVar ▪ Variant effect prediction tools: PolyPhen-2, SIFT ▪ Mutation Libraries: PMut <p>Programming and Database: HTML, MySQL, PHP, XAMPP Server, WampServer, WinSCP</p> <p>Biochemistry Lab</p> <ul style="list-style-type: none"> ▪ Mammalian cell culture including transfection of plasmid DNA ▪ Functional assays with mammalian cells ▪ Gel electrophoresis (Agarose gels, SDS gels) ▪ PCR for cloning of murine receptors ▪ Transformation in E. coli Plasmid preparation from E. coli, restriction of plasmid DNA <p>Medical Skills</p> <ul style="list-style-type: none"> ▪ History-taking (anamnesis) ▪ Physical examination ▪ ECG taking

<p>Publications</p>	<ol style="list-style-type: none"> 1) Alper Karagöl, Taner Karagöl, Eva Smorodina, & Shuguang Zhang. (2023) Structural bioinformatics studies of glutamate transporters and their AlphaFold2 predicted water-soluble QTY variants and uncovering the natural mutations of L->Q, V->T, F->Y and vice versa. 2) Karagöl, H.A. and Karagöl, M.T. (2018). Multipl sklerozun olası tedavisi için in silico makromolekül dizaynı ve hesaplamalı analizi. [In silico macromolecule design and computational analysis for possible treatment of multiple sclerosis.], [online] Googlesciencefair.com. Available at: https://www.googlesciencefair.com/projects/2018/db7a23df00c2891d75b5a625e5d95edb816967bd1b4be76daaf3e8bd1324454 [Accessed 3 Dec. 2019]. 3) Çetin A., Acar A.C., Karagöl H.A., Gülseren I., Koç M., Ergin O.S., Gürsoy Y.K. (2020). Çıkar Çatışması Kılavuzu [Conflict of Interest Guideline], European Medical Student Association Turkey. Available at: https://emsa-turkey.org/cikar-catismasi-kilavuzu/ [Accessed 3 Feb. 2023].
<p>Language Skills</p>	<p>Turkish: native English: advanced German: intermediate – upper intermediate</p>
<p>Honours and Awards</p>	<ul style="list-style-type: none"> ▪ Istanbul University Istanbul Medical Faculty English Program, settled with honours (Highest exam score) ▪ National Higher Education Institutions Exam (YKS) 2018 - top 350 out of 2,381,090 (0.015%) ▪ TUBITAK Scientist Support Programs - 2205 Undergraduate Scholarship (2018 -2025) ▪ Istanbul Medical Chamber Educational Scholarship 2018 – 2019, 2022-2023 ▪ Republic of Turkey Ministry of National Education - 2011 Scholarship exam for primary and secondary education institutions - Scholarship (2012 – 2018) ▪ TUBITAK 25th Biology Olympiad Jan 2018: Bronze Medal ▪ TUBITAK 25th Biology Olympiad 13 May 2017: second in the Marmara Region (Including Istanbul and Bursa), sixth in Turkey. ▪ TUBITAK National Science Olympiads, Summer Courses Participation Certificate 9-23 Sept 2017 ▪ BAYER - Turkey High School Science Projects Competition 2017: Certificate of Achievement