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Işın Altinkaya
Curriculum Vitae

EDUCATION

- **BSc in Biology** Hacettepe University, Ankara, Turkey
Faculty of Science, Department of Biology 2015 - 2020
GPA: 3.23, Date of Graduation: 06.07.2020, Certificate No: 20-321-032

LANGUAGE

Turkish (*Native*)
English (*Fluent*)
TOEFL iBT: 102, Reading: Advanced, Listening: Advanced, Speaking: High-Intermediate, Writing: Advanced
Danish (*Beginner*)

RESEARCH EXPERIENCE

- **Biological Data Analysis Lab** Hacettepe University, Computer Science
Intern, Advisor: Dr. Tunca Doğan October 2019 - present
 - **Disentangling selection and polygenic traits on gene networks:** Discovery of polygenic traits on gene networks using a novel human population genetics approach.
- **Fumagalli Lab** Imperial College London, Life Sciences
Intern, Advisor: Dr. Matteo Fumagalli July 2019 - September 2019
 - **ANGSDgui:** A web user interface for the ANGSD software.
 - **HMMploidy:** A tool to infer ploidy levels from short-read sequencing data using Hidden Markov Models.
- **Biogeography Research Laboratory** Hacettepe University, Biology
Intern, Advisor: Dr. Barış Özüdoğru February 2019 - present
 - **mscRAD:** A novel multi-species coalescent pipeline for resolving evolutionary histories using RADseq data.
- **Laboratory of Comparative & Evolutionary Biology** Middle East Technical University
Intern, Advisor: Dr. Mehmet Somel August 2018 - June 2019
 - **Genomic Data Analyses:** I performed genome-wide analyses regarding 1240K capture method for ancient genomic data, its probes & effectiveness of the method. I used various command-line tools on a Linux server and wrote scripts in R and Python. A presentation was given in the end of this study.
- **Laboratory of Evolutionary & Quantitative Genetics** Hacettepe University, Biology
Intern, Advisor: Dr. Ergi Deniz Özsoy October 2015 - February 2019
 - **Biostatistics & Quantitative Genetics:** I performed analyses with *Drosophila melanogaster* DGRP lines & phenotypic data. A presentation was given in the end of this study.

SKILLS

Programming languages: Python, R, Bash, JavaScript, C/C++, Perl

Markup languages: L^AT_EX, HTML&CSS

Operating systems: GNU/Linux (Ubuntu, Arch and others), POSIX, OSX, Windows

Developing tools: git, vi/vim

Analytical background: I have substantial experience in working with genomic data sets and dealing with file formats such as FASTQ, BAM/CRAM, FASTA and in usage of several command line tools for analysis of genomic data such as SAMtools, BCFtools, VCFtools, HTSlib, GATK, BWA, PLINK, in genome simulation software such as SLiM, ms/msprime, and in phylogenetic software such as RAxML, BEAST and RevBayes. I also have experience in data mining, artificial intelligence, machine learning, deep learning and software development processes.

For more information on my programming skills and experiences please refer to my GitHub profile.

SELECTED COURSES (ATTENDED)

Stay-at-Home RevBayes Workshop, Instructors: Joëlle Barido-Sottani, Walker Pett, Josh Justison, Wade Dismukes, Luiza Fabreti, Tracy Heath, Jeremy M. Brown, Rosana Zenil-Ferguson, *2020-ongoing*
Fundamentals of Bioinformatics, Department of Computer Science, Hacettepe University, Lecturer: Dr. Tunca Doğan, *2019*
Population Genetics, Department of Molecular Biology and Genetics, Middle East Technical University, Lecturer: Dr. Mehmet Somel, *2018*
Population Genetics Simulations with R, Middle East Technical University, *2018*
Introduction to Game Theory, Anadolu University, *2017*
Evolutionary Genomics Winter School, Hacettepe University, *2017*

PRESENTATIONS

Biological Evolution, Science and Future Magazine Science for Youth Seminar, *2018*
Evolutionary Perspectives on Ecological Problems, Turkey Meets Evolution: Bilkent University, *2016*
Using Evolutionary Biology to Prevent the Extinction of Species, 7th National Environment and Ecology Student Congress, *2016*

SELECTED SYMPOSIUM AND EVENTS

12th Aykut Kence Evolution Conference (as Organizer), *2018*
Turkey Meets Evolution: Izmir (as Organizer), *2012*
Tree of Evolution Bornova Anatolian High School Evolution Workshop (as Organizer), *2012*

TEACHING EXPERIENCE

Introduction to Computational Biology and Bioinformatics Workshop (using Python), GitHub repository of the workshop, *2020*
Statistics with R - Private course, *2019*
Biometry Class (using R), Hacettepe University - Teaching Assistantship, *2019*
Introductory Evolutionary Biology, Science and Utopia Evolution Courses, *2017*
Introductory Evolutionary Biology, Hacettepe University Evolution Workshops, *2016*

POPULAR PUBLICATIONS (IN TURKISH)

Science and Utopia Magazine, Issue: 283, Examining the Thin Line Between Living and Non-Living Matter, with Dr. Martin Hanczyc
Science and Utopia Magazine, Issue: 278, Education and Perceptions: Evolution in Turkey
Atheist Magazine, Issue: 16, The Evolving Brain
Atheist Magazine, Issue: 14, Evolutionary Perspectives on LGBTI+
Atheist Magazine, Issue: 13, Understanding Evolution via Human Body
Atheist Magazine, Issue: 12, Atheist Thinking under the Light of Evolution
Popular science articles at Evrim Ağacı (Tree of Evolution) can be found clicking here.

WRITING EXPERIENCE

- **Science and Utopia Magazine**
Popular science writer, Subject: Evolutionary Biology *June 2017 - May 2018*
- **Popular Science (Turkey)**
Translator *February 2016 - May 2016*
- **Tree of Evolution**
Writer, Editor; Subject: Evolutionary Biology *November 2015 - present*

SCHOLARSHIPS & AWARDS

Erasmus+ Traineeship Grant, Imperial College London, 2019

Hacktoberfest award for contributing to open source projects, 2018 and 2019

Atheist Alliance International Foundation Scholarship, 2016 and 2017

SOCIETY MEMBERSHIPS

International Society for Computational Biology Student Council Regional Student Group Turkey, 2018 - present

Ecology and Evolutionary Biology Society of Turkey, 2017 - present

PUBLICATIONS IN PREPARATION

Working title of manuscript: *ANGSDgui: A web user interface for analysing next-generation sequencing data*

Project with Dr. Matteo Fumagalli, Imperial College London, Department of Life Sciences. The aim is to develop an interactive web user interface for the ANGSD software; a software for analyzing next generation sequencing data. I am the primary contributor in this project, and currently, I am building the web user interface using JavaScript, HTML, and CSS.

Working title of manuscript: *mscRAD: A novel multi-species coalescent pipeline for resolving evolutionary histories using RADseq data*

Project with Dr. Barış Özüdoğru, Hacettepe University, Department of Biology, and Dr. İsmail Sağlam, Koc University, Department of Molecular Biology and Genetics. The aim is to create a consistent and repeatable pipeline for RAD loci discovery and generation that can be used in phylogenetic inferences based on the multi-species coalescent. In this project, I am writing a pipeline for conducting phylogenomic analysis from thousands of genomic loci and performing simulations to test the effectiveness of this novel approach. I will be the lead author of the paper.

Working title of manuscript: *Disentangling polygenic traits on gene networks with a novel population genetics approach*

Project with Dr. Tunca Doğan, Hacettepe University, Department of Computer Science. The aim is to detect selection on gene networks using various data types such as human disease-associated variants, genetic variation between human populations, linkage disequilibrium and gene interaction data curated from public databases. I am the primary contributor in this project.

Working title of manuscript: *HMMploidy: inference of ploidy levels from short-read sequencing data*

The project is led by Samuele Soraggi and I contributed to the source code during my internship at Fumagalli lab. A tool to infer ploidy levels from short-read sequencing data using Hidden Markov Models. My contributions can be viewed from the GitHub repository of the project clicking [here](#).

REFEREES

Dr. Matteo Fumagalli, m.fumagalli@imperial.ac.uk, imperial.ac.uk/people/m.fumagalli, Faculty of Natural Sciences, Department of Life Sciences, Silwood Park Campus, SL5 7PY, Ascot, Berks, UK

Dr. Barış Özüdoğru, barisoz@hacettepe.edu.tr, barisozudogru.com, Department of Biology, Hacettepe University, 06800 Ankara Turkey

Dr. Mehmet Somel, msomel@metu.edu.tr, compevo.bio.metu.edu.tr, Department of Biology, Middle East Technical University, 06800 Ankara Turkey

Dr. Ergi Deniz Özsoy, edo@hacettepe.edu.tr, Department of Biology, Hacettepe University, 06800 Ankara Turkey