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Işın Altınkaya

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++
Markup languages: LaTeX, HTML&CSS
Operating systems: GNU/Linux
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 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 Samuale 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