

# METIN BALABAN

Graduate Student

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## RESEARCH INTERESTS

My research area is computational biology. My research interests include developing scalable algorithms for large-scale biological data, phylogenetics and its applications in molecular ecology, and comparative genomics.

## EDUCATION

University of California, San Diego  
PhD in Bioinformatics and System Biology. Advisor: Siavash Mirarab  
2017 – La Jolla, California

Swiss Federal Institute of Technology in Lausanne  
Master of Computer Science – GPA 5.54/6.00  
2015 – July 2017    Lausanne, Switzerland

Middle East Technical University  
Bachelor of Computer Engineering – GPA 3.97/4.00  
2011 – 2015    Ankara, Turkey

## PUBLICATIONS

### Journal Articles

- Metin Balaban, Daniel Roush, Qiyun Zhu, and Siavash Mirarab (2021). “APPLES-2: Faster and More Accurate Distance-based Phylogenetic Placement using Divide and Conquer”. In: *bioRxiv*. DOI: 10.1101/2021.02.14.431150.
- Yueyu Jiang, Metin Balaban, Qiyun Zhu, and Siavash Mirarab (2021). “DEPP: Deep Learning Enables Extending Species Trees using Single Genes”. In: *bioRxiv*. DOI: 10.1101/2021.01.22.427808.
- Shahab Sarmashghi, Metin Balaban, Eleonora Rachtman, Behrouz Touri, Siavash Mirarab, and Vineet Bafna (2021). “Estimating repeat spectra and genome length from low-coverage genome skims with RESPECT”. In: *bioRxiv*. DOI: 10.1101/2021.01.28.428636.
- Eleonora Rachtman, Metin Balaban, Vineet Bafna, and Siavash Mirarab (2020). “The impact of contaminants on the accuracy of genome skimming and the effectiveness of exclusion read filters”. In: *Molecular Ecology Resources* 20.3, pp. 649–661. DOI: <https://doi.org/10.1111/1755-0998.13135>.
- Metin Balaban, Niema Moshiri, Uyen Mai, Xingfan Jia, and Siavash Mirarab (2019). “TreeCluster: Clustering biological sequences using phylogenetic trees”. In: *PLOS ONE* 14.8, pp. 1–20. DOI: 10.1371/journal.pone.0221068.
- Metin Balaban, Shahab Sarmashghi, and Siavash Mirarab (2019). “APPLES: Scalable Distance-Based Phylogenetic Placement with or without Alignments”. In: *Systematic Biology* 69.3, pp. 566–578. ISSN: 1063-5157. DOI: 10.1093/sysbio/syz063.
- Daniel Doerr, Metin Balaban, Pedro Feijão, and Cedric Chauve (2017). “The gene family-free median of three”. In: *Algorithms for Molecular Biology* 12.1, p. 14.

## KEY COMPETENCIES

Computational Biology and Bioinformatics  
Data Science    Algorithms  
Workflows    Statistics    Optimization

## ACHIEVEMENTS

- Awards and scholarships**
- UC San Diego Center for Microbiome Innovation (CMI) Grand Challenges Award in 2020-2021
  - EPFL (Switzerland) Research scholarship
  - Turkey state scholarship for outstanding academic success
- Conference fellowship awards**  
I received travel fellowship awards from NSF at RECOMB 2019 and from ISCB at GLBIO 2019
- Valedictorian**  
at Middle East Technical University Computer Engineering Department
- 5th in Turkey's biggest bstandardized (SAT like) exam**  
Among 1.856.890 applicants nationwide, I placed 5th in 2010

## PRESENTATIONS

- Conferences**
- ISMB 2020
  - RECOMB 2019
  - GLBIO 2018

## TECHNICAL SKILLS

Python    C/C++    UNIX    R    Bash  
Snakemake    Scala    Spark    Java  
Hadoop    Matlab    Git    Latex

## STRENGTHS

Adaptable    Problem Solver  
Team Player    Analytical  
Multinationally Exposed    Curious  
Deadline Driven    Target-Oriented

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## WORK EXPERIENCE

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Swisscom Digital Lab

Master Thesis. Advisor: Patrick Thiran

📅 2017 📍 Lausanne, Switzerland

Thesis Real-time Traffic Estimation on Highways Using Cellular Data

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Swiss Federal Institute of Technology in Lausanne,  
Laboratory of Computational Biology and Bioinformatics.

Research Scholar. Mentor: Bernard Moret

📅 2015 – 2017 📍 Lausanne, Switzerland

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## TEACHING

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Teaching Assistant

Introduction to Computer Engineering

📅 2020-2021 📍 UC San Diego

## LANGUAGES

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Turkish  
English  
French

