

# Aris Paschalidis

BIOINFORMATICIAN · BAILEY LAB

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## Education

### Brown University

Providence, RI

B.S. IN COMPUTATIONAL BIOLOGY

Sep. 2017 - May 2021

- Honors Thesis Title: "coiaf: Complexity Of Infection Estimation with Allele Frequencies"
- Magna Cum Laude
- GPA 4.0

### Boston University

Boston, MA

TOOK CLASSES WHILE IN HIGH SCHOOL

Sep. 2015 - May 2017

- GPA 3.98

### Boston University Academy

Boston, MA

HIGH SCHOOL

Sep. 2013 - May 2017

- Thesis Title: "Regression and Classification Using Optimal Decision Trees"
- Summa Cum Laude

## Work Experience

### Brown University

Providence, RI

BIOINFORMATICIAN

June. 2021 - present

- Developer for coiaf, a package to estimate the number of malarial strains a patient is infected with, which is known as the Complexity of Infection (COI).
- Developer for MIPTools, a suite of computational tools used for molecular inversion probe design, data processing, and analysis.
- Developer for mipicorn, a unified framework for molecular inversion probe and amplicon analysis. It provides the tools to quickly parse files several gigabytes large, filter and manipulate data, analyze data, and, most informatively, visualize data.

LAB MEMBER

Jan. 2020 - present

- Developer for coiaf, a package to estimate the number of malarial strains a patient is infected with, which is known as the Complexity of Infection (COI).

### Massachusetts General Hospital (MGH)

Boston, MA

RESEARCH INTERN

May 2019 - September 2020

- Worked at the Orthopedic Trauma Department shadowing doctors and conducting research primarily with Dr. Heng.
- Focused on examining associations between mental health scores and physical function scores of patients who had recently undergone total knee or hip replacements.

SUMMER FELLOW

May 2019 - Dec. 2019

- Worked at the cardiovascular research center under the tutelage of Dr. Das, Dr. Varrias, and Dr. Rodosthenous.
- Worked on examining associations between micro RNAs, long non coding RNAs, and heart failure.

### Brown University

Providence, RI

RESEARCH INTERN

May 2018 - Jan. 2019

- Worked with Prof. Schmid at the Center for Evidence Based Synthesis.
- Created a package to analyze n-of-1 clinical trials. The package allows users to run normal, binomial, poisson, or ordinal regressions on the data.

### Massachusetts Institute of Technology

Cambridge, MA

RESEARCH INTERN

Jun. 2016 - Sep. 2016

- Internship at the MIT Operations Research Center.
- Worked with Dr. Bertsimas and Dr. Dunn on regression and classification problems using an approach which derives optimal decision trees by solving an integer optimization problem.

RESEARCH INTERN

Jun. 2015 - Sep. 2015

- Worked at the MIT Operations Research Center.
- Worked with Prof. Dimitris Bertsimas on a regression problem with an application to ophthalmology.

## Select Honors & Awards

- 2021 **Magna Cum Laude**, Brown University
- 2021 **Honors**, Computational Biology, Brown University
- 2019 **Fellowship**, American Heart Association Undergraduate Student Summer Fellowship Award

## Publications

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### JOURNAL ARTICLES

#### **coiaf: Directly Estimating Complexity of Infection with Allele Frequencies**

PASCHALIDIS A., WATSON O. J., AYDEMIR O., VERITY R., AND BAILEY J. A.

*Preprint*. May 2022

#### **Patient-Reported Mental Health Score Influences Physical Function After Primary Total Knee Arthroplasty**

MELNIC C. M., PASCHALIDIS A., KATAKAM A., ET AL.

*The Journal of Arthroplasty*. Apr. 2021

#### **Predictive Models of Mortality for Hospitalized Patients With COVID-19: Retrospective Cohort Study**

WANG T., PASCHALIDIS A., LIU Q., ET AL.

*JMIR Medical Informatics*. Oct. 2020

### CONFERENCE PROCEEDINGS

#### **Regression and Classification Using Optimal Decision Trees**

BERTSIMAS D., DUNN J., AND PASCHALIDIS A.

*2017 IEEE MIT Undergraduate Research Technology Conference (URTC)*, Nov. 2017

### POSTER PRESENTATIONS

#### **The Effects of a Mental Health Diagnosis on Achieving the Minimal Clinically Important Difference in Primary and Revision Total Joint Arthroplasty**

SALIMY M. S., PASCHALIDIS A., DUNAHOE J., ET AL.

American Association of Hip and Knee Surgeons Annual Meeting, Nov. 2022, Grapevine, Texas

#### **Effects of Mental Health on PROMIS Scores After Primary THA**

PASCHALIDIS A., SALIMY M. S., ROBINSON M. G., ET AL.

Eastern Orthopedic Association Annual Meeting, Oct. 2022, Naples, Florida

#### **Complexity of Infection Estimation with Allele Frequencies**

PASCHALIDIS A., WATSON O. J., VERITY R. J., AND BAILEY J. A.

American Society of Tropical Medicine and Hygiene Annual Meeting, Nov. 2021, Virtual

#### **Physical Function After Primary Total Knee Arthroplasties (TKAs) Stratified by Pre-operative Patient-Reported Mental Health Score**

MELNIC C. M., PASCHALIDIS A., KATAKAM A., ET AL.

American Academy of Orthopaedic Surgeons 2021 Annual Meeting, Aug. 2021, San Diego, California

#### **Predictors Of Continuing Improvement After 1st Month Of Crt Implantation In Women With Heart Failure (Hf)**

VARRIAS D., PUJOL M., SAMALA V., ET AL.

Heart Rhythm Society 2020 Science 2020, Virtual

#### **Changes in Plasma Extracellular RNAs: Independent Associations with Left and Right Ventricular Reverse Remodeling**

VARRIAS D., PASCHALIDIS A., MICHELHAUGH S., ET AL.

Cardiovascular Research Center Retreat 2019