

BENJAMIN SEPANSKI

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EDUCATION

University of Texas at Austin

Ph.D. Student

Computer Science, Programming Languages, UToPiA Research Group

Advisor: Dr. Işıl Dillig

August 2020 - Present

Overall GPA: 4.0

Baylor University

B.S. in Mathematics, Minor in Computer Science

45 hours graduate coursework in mathematics, computer science, and statistics

Advisor: Dr. Robert Kirby

August 2016 - May 2020

Overall GPA: 4.0

RESEARCH

UToPiA Group

Automated Solutions in Programming Languages

August 2020 - Present

- Actively researching automated tools to generate correct and efficient concurrent programs.

Baylor University

Combined FEM & BEM Methods for the Helmholtz Equation

January 2019 - August 2020

- Applied nonlocal boundary integral equations to foster finite element methods on wave equations in an unbounded domain
- Created interface from finite element code-generating library Firedrake into `pytentential`, a code library for evaluating layer potentials
- Paper in submission <https://arxiv.org/abs/2009.08493> (with Dr. Robert Kirby and Dr. Andreas Klöckner)

Director's Summer Program

Summer Research Program at the National Security Agency

May 2018 - August 2018

- Received Top Secret // Sensitive Compartmented Information clearance with Agency special background investigation and full scope polygraph examination
- Submitted detailed findings in an internal refereed technical paper
- Designed, implemented, and tested graph optimization algorithms
- Applied and extended language modeling and n-gram techniques to a high-priority classified project

Research Experience for Undergraduates at SDSU

Researched Numerical Semigroups at San Diego State University

May 2017 - August 2017

- *Augmented Hilbert series of numerical semigroups* (with Christopher O'Neill, Jeske Glenn, and Vadim Ponomarenko) *Integers* 19 (June 3, 2019), #A32
- Presented findings at the 2018 Joint Mathematics Meetings

AWARDS AND HONORS

2020 Department of Energy Computational Science Graduate Fellow

2019 Goldwater Scholar

Recipient of Mathematical Association of America (MAA)’s Student Travel Grant to the 2018 Joint Mathematics Meetings

2018 & 2019 Outstanding Math Student at the J. Harry and Anna Jeanes Academic Convocation

Recipient of Baylor Mathematics Scholarships:

 Jerry Johnson Scholarship (2018 & 2019) Gene & Ruth B Royer Scholarship (2018 & 2019)

 KL & Vivian Carter Scholarship (2017) Howard/Anita Rolf Scholarship (2017)

 Schultz-Werba Math Scholarship (2017) Carlile Engineering Scholarship (2016)

Received President’s Gold Scholarship at Baylor University

2017 National Merit Scholar

TECHNICAL STRENGTHS

Computer Language Proficiency	Python, R, Java, C++, C
Software & Tools	Git, Unix Shell, LaTeX, ggplot, Excel, Maven, Firedrake/FEniCS Unified Form Language
Some Experience With	x86-64 assembly language, Matlab, GAP (through Sage)