

Krzysztof Drewniak

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Citizenship: United States and Poland

Education

University of Washington

2018–Present

PhD in Computer Science

Seattle WA

Advised by Dr. Rastislav Bodik. Programming languages applied to systems.

The University of Texas at Austin

2014–2018

BS in Computer Science

Austin, TX

BS in Mathematics

GPA: 3.96/4.0

Turing Scholars Honors Program, Department of Computer Science

Honors thesis: GEMM3: Constant-Workspace High-Performance Multiplication of Three Matrices for Matrix Chaining

Advised by Dr. Robert van de Geijn.

Texas Academy of Mathematics and Science

2012–2014

Residential early college program

Denton, TX

GPA: 4.0/4.0

Experience

Academic Experience

Carnegie Mellon University

Feb 2018–Jun 2018

Visiting Undergraduate Researcher

Pittsburgh, PA

Department of Electrical and Computer Engineering

Developed an automated high-level loop fusion analysis method based on loop invariants for algorithms in linear algebra and similar fields.

Results are expected to appear as part of a publication currently being prepared.

RWTH Aachen

Sep 2017–Jan 2018

Visiting Undergraduate Researcher

Aachen, Germany

High-Performance and Automatic Computing group, Aachen Institute for Advanced Study in Computational Engineering Science

Investigated methods for the automatic generation of code to efficiently normalize linear algebra expressions from axioms.

The University of Texas at Austin

Aug 2016–May 2018

Undergraduate Research Assistant Austin, TX
Science of High-Performance Computing group, Institute for Computational Engineering and Sciences

Investigated techniques for improving the efficiency of fused matrix and vector operations. Key result was an algorithm for $D += ABC$ in constant additional workspace, attaining increased performance.

The University of Texas at Austin

Jan 2016–May 2016

Teaching Assistant

Austin, TX

CS 429H, Honors Computer Architecture

University of North Texas

Jun 2013–May 2014

Undergraduate Research Assistant

Denton, TX

Computational Epidemiology Research Lab

Investigated strategies for the geographical allocation of vaccines in order to reduce epidemic spread in simulation.

Industry Experience

Microsoft

Summer 2017

Software Engineering Intern, AI & Research

Bellevue, WA

Developed deep learning models for Bing Maps auto-suggest and thereby produced significant projected improvements in result quality.

TrueCar

Summer 2016

Software Engineering Intern

Austin, TX

Developed machine learning solution to combat scraping and improve lead quality.

WhatsApp

Summer 2015

Software Engineering Intern

Mountain View, CA

Increased media server reliability and performance. Overhauled internal alert distribution system. Reworked testing tools to support encrypted media and messages

Publications

1. Krzysztof Drewniak. “GEMM3: Constant-Workspace High-Performance Multiplication of Three Matrices for Matrix Chaining”. Honors Thesis HR-18-01, Department of Computer Science, The University of Texas at Austin, Austin, Texas, April 2018. <https://apps.cs.utexas.edu/apps/tech-reports/106256>
2. Krzysztof Drewniak, Joseph Helsing, and Armin R. Mikler. “A method for reducing the severity of epidemics by allocating vaccines according to centrality”. In *Proceedings of the 5th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics, BCB '14*, pgs. 341–350, New York, NY, USA, 2014. ACM.

Honors, Scholarships, and Awards

Anne Dinning-Michael Wolf Endowed Regental Fellowship	2018
<i>University of Washington, Department of Computer Science and Engineering</i>	
Louis E. Rosier Memorial Endowed Scholarship	2015, 2016
<i>The University of Texas at Austin, Department of Computer Science</i>	
Lois Ford LaBauve Scholarship	2015, 2016
<i>The University of Texas at Austin, Services for Students with Disabilities</i>	
Kevin E. Underhill Memorial Endowed Presidential Scholarship	2016
<i>The University of Texas at Austin, College of Natural Sciences</i>	
College of Natural Sciences Scholarship	2015
<i>The University of Texas at Austin</i>	
College of Natural Sciences Freshman Scholarship	2014
<i>The University of Texas at Austin</i>	
Summer Research Scholarship	2013
<i>University of North Texas, Texas Academy of Mathematics and Science</i>	