BRANDON NETH

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Education

The University of Arizona | Tucson, AZ
Bachelor of Science in Computer Science and Mathematics   **May 2019**
     Minors in Anthropology and Linguistics

- Overall GPA: 3.575
- Major (Mathematics) GPA: 3.640
- Major (Computer Science) GPA: 3.600

Master of Science in Computer Science   **May 2020**

Industry Skills

- iOS development, including app layout, notifications, iCloud, and Today View
- Knowledgeable about topics surrounding parallelism
- Familiar with C, x86 Assembly, Python, Java, Swift, and MATLAB programming languages
- Familiar with LLVM intermediate representation
- Familiar with various graph libraries across multiple languages, such as GraphViz, d3js, dagre, and TensorFlow
- Experience with grant writing and research techniques
- Experience with AutoCAD modeling tool

Areas of Interest

- Program analysis and optimization
- Compilers and programming languages
- Security
- Community engagement in STEM, especially among underrepresented communities
- Research
- Graph Theory

Work Experience

Massachusetts Institute of Technology Lincoln Laboratory Group 59

- Computer Security Intern   *May 2018 – Aug. 2018*
  - Designed and performed experiments to evaluate computer security solutions

- o Created tools to automate and assist in the evaluation and visualization of computer security solutions
  - o Consulted on compiler toolchain security projects

University of Arizona Computer Science Department

- Research Assistant   *Feb. 2017 – Present*
  - o Work on a team to create tools to optimize scientific data analysis code through specialization and parallelism
  - o Analyze programs using binary execution traces to expose and exploit parallelizable and reducible loops
  - o Author papers describing the novel techniques developed through our research
  - o Created my own graph library for use in program analysis

Heritage of Hudson Nursing and Rehabilitation Center | Hudson, OH

- Activities Aide   *Dec. 2014 – Jan. 2016*
  - o Began as a volunteer in the activities department in September 2014, hired thereafter
  - o Planned and executed Activities Department schedule Thursday to Sunday
  - o Completed annual projects. Created a Secret Santa event from the staff to the residents
  - o Collaborated and coordinated with nursing staff to develop engaging activities, such as birthday parties and special guest musicians and performers
  - o Conducted state evaluations with residents

Professional Engagement

- Grace Hooper Celebration   *Fall 2017*
  - o Celebrates women in the computing fields
- SC17 Student Volunteer   *Fall 2017*
  - o International Conference for High Performance Computing, Networking, Storage, and Analysis
- Languages and Compilers for Parallel Computing Poster Presentation   *Fall 2018*
  - o Presented poster on current research into automatic parallelization
- Code Generation and Optimization Student Research Competition   *Spring 2019*

Campus Involvement

Delta Lambda Phi Social Fraternity | Omega Chapter

- President   *2018 Calendar Year*
  - o Oversee all chapter activities, including recruitment, social, service, and academic events
  - o Automate chapter management activities, such as member schedule master-list and community service records
  - o Expand transition guides across all executive board positions to build collective knowledge
  - o Introduced a fundraising initiative which increased revenue by over 120% YoY

- Expanded recruitment efforts leading to a 30% increase in membership
- Academic Chair *January 2018 - Present*
  - Ensure the academic success of the chapter's members
  - Develop a scholarship fund in collaboration with the university's LGBTQ+ Resource Center and Fraternity and Sorority Program to assist LGBTQ+ students on campus
  - Formulate an annual academic success plan to improve the chapter's academic performance, leading to an average GPA increase of half of a letter grade in one semester.
- Vice President *2016-2017 Academic Year*
  - Lead the Rush and Recruitment committee, which involved marketing the fraternity and planning 5 events over the course of our Rush week including a volunteerism event with the Southern Arizona AIDS Foundation
  - Engage community organizations and multicultural groups on campus, such as the LGBTQ+ Resource Center and Women's Resource Center
  - Act as representative to the All Queer Council, a coalition of the University of Arizona's LGBTQ+ organizations
  - Employ my computer skills to automate executive tasks, such as scheduling, bookkeeping, and academic success plans
  - Resolve conflicts between other members of the fraternity

United Sorority and Fraternity Program

- Council Representative *2016-2017 Academic Year*
  - Represented Delta Lambda Phi on the council of multicultural fraternities and sororities at the University of Arizona
  - Coordinate with other multi-cultural Greek organizations, like our sibling sorority Gamma Rho Lambda
- Vice President of Academic Achievement *Fall 2018*
  - Stepped up to fill position for resigning VP for remainder of term
  - Hold roundtables for council member academic chairs on topics such as test and study strategies, mindfulness, stress management, and time management
  - Work alongside other executive board members to nominate member organizations for national awards to recognize their contributions to the University of Arizona campus

University of Arizona Computer Science Graduate Student Council

- Accelerated Master's Program Representative *Fall 2018 - Present*
  - Represent the interests of students enrolled in the department's Accelerated Master's Program
  - Draft governing documents for the newly formed council
  - Advocate for inclusivity and accessibility for all students in the department

University of Arizona Women in Computer Science

- Member *Fall 2018 - Present*
  - Advocate for more equitable representation of women in computing fields
  - Present about the experience of undergraduate research
  - Sit on panels about the research and intern experiences

Additional Research Experience

- Experimental Archaeology   *Fall 2017 - Present*
  - Work with Dr. Eleni Hasaki to explore the properties of potter's wheels in Greek antiquity
  - Perform analysis on wheel characteristics and usage data
  - Model wheel attributes using AutoCAD
  - Construct web-based tools to aid in data analysis for other archaeologists in the field

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Other Awards, Achievements, and Membership

- University of Arizona College of Science Galileo Circle Scholar Recipient   *Spring 2018*
  - Recognizes graduate and undergraduate students who represent the tremendous breadth of research interests in the College of Science
- University of Arizona Computer Science Ambassador   *January 2018 – Present*
  - Represent the Computer Science department
  - Give tours to prospective students
  - Participate in community outreach programs, including visits to middle and high school classes, science fairs, and career fairs
- Honorable Mention for 2018 CRA Outstanding Undergraduate Researcher Award   *December 2017*
  - Recognizes undergraduate researchers who show outstanding potential in an area of computing research
- The President's Volunteer Service Award, Gold   *Spring 2015*
  - Completed more than 250 hours of community service from Fall 2014 to Spring 2015
- National Merit Finalist   *Spring 2015*
  - Recognized for outstanding academic achievement in the top 1% of entrants
- Order of Omega   *Fall 2016*
  - Joined the Greek honors society in Fall of 2016, currently an active member
  - Recognize outstanding achievement and contributions to the University from students in Greek organizations
  - Promote unity among Fraternities and Sororities around common values like equality, justice, and excellence
- President of HHS Gender and Sexuality Alliance   *Fall 2013 - Spring 2015*
  - Pushed the school's administration to implement a gender-neutral bathroom to support trans and gender-nonconforming students
  - Designed inclusivity and diversity awareness education opportunities for faculty
  - Organized speakers on topics such as trans rights, allyship, and the history of struggles for social equality
- Preceptor   *Spring 2017*
  - Assisted students in understanding the class content
  - Ran exam and quiz review sessions
  - Wrote an independent research paper for the UA Anthropology website
- University of Arizona Academic Distinction Award   *2016-18 School Years*
  - Recognizes a GPA of 3.5 and above over a school year

Publications

- **"Language-Agnostic Optimization and Parallelization for Interpreted Languages".** *Michelle Mills Strout, Saumya Debray, Kate Isaacs, et. al.* To appear in the Proceedings of the 30th Workshop on Languages and Compilers for Parallel Computing (LCPC) *Summer 2017*