Arthur Ozga

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Objective

Seeking a full-time position to develop programming languages and their associated editing environments.

Education

University of Michigan – Ann Arbor, MI *Aug. 2012-May 2016*

Majors: Computer Science Engineering and Honors Mathematics.
GPA: 3.76/4.00
Relevant Courses:

• ENGR 151: Accelerated Introduction to Computers and Programming (Fall 2012) • EECS 280: Programming and Introductory Data Structures (Winter 2013) • EECS 281: Data Structures and Algorithms (Winter 2013) • EECS 482: Operating Systems (Winter 2015) • EECS 483: Compilers (Winter 2015) • EECS 376: Introduction to the Theory of Computation (Winter 2013) • EECS 576: Complexity Theory (Fall 2014) • PHIL 414: Math Logic (Fall 2012) • MATH 295: Honors Mathematics I (Fall 2012) • MATH 296: Honors Mathematics II • Math 395: Honors Analysis I (Fall 2013) • MATH 396: Honors Analysis II (Winter 2014) • MATH 393: Honors Algebra I (Fall 2014) • MATH 465: Introduction to Combinatorics (Fall 2013) • MATH 565: Combinatorics and Graph Theory (Fall 2015) • MATH 566: Algebraic Combinatorics (Winter 2015)

Experience

Microsoft Corp. -- Redmond, WA, USA *May 2015-August 2015*

Software Development Intern in Developer Division, TypeScript Language Team

- Proposed, implemented, and merged multiple language features in the core TypeScript language (url: http://www.typescriptlang.org/), including merged class-interface declarations, the "abstract" keyword, and comment completion features. Participated in weekly design meetings and synthesized feedback from the open source community to devise cohesive and elegant solutions. Submitted several bug-fixes throughout the system.

University of Michigan – Ann Arbor, MI, USA *August 2014-May 2015*

Instruction Assistant for EECS 376: Introduction to the Theory of Computation

- Developed curriculum and assignments for the course, as well as managed assignment submissions and graders for the large-scale course (170 students in Fall 2014, 420 in Winter 2015). Wrote exams during the winter term. Led a weekly discussion session and devised exercises and activities for a group of ~30 students. Additionally, guest lectured on two occasions when the professor was unavailable.

Microsoft Corp. -- Redmond, WA, USA *May 2014-August 2014*
Explorer Intern in Cloud & Enterprise, Cloud Monitoring and UX Team

- Rotated positions between project manager, developer, and tester in order to deliver a new platform for customers to monitor the status of their cloud-scale instances. Ported XTS Views (Autopilot diagnostics viewer) to a web platform. Used Scenario Focused Engineering (SFE) to develop a plan and appropriate solution. Interviewed customers, consulted engineers, and gathered usage data to decide on the usage of the new web platform, Ibiza. Learned and used the Autopilot monitoring stack to pipeline and consume data on the new platform. Collaborated with several other teams working on similar products to deliver a common experience and platform to provide new experiences and furthering the One Microsoft vision. Delivered, presented, and popularized the product.

Enigma Systemy Ochrony Informacji z.o.o. -- Warsaw, Poland *May 2013-July 2013*
Networking developer

- Developed a server-based optical character recognition (OCR) software suite used for mass document transcription. The service accepts image files in a variety of formats--including pdf--converts the images to an appropriate format, and feeds the resultant file to an OCR application. The client may query the status of their file's interpretation using a GUID and get results upon completion. The system was written to run concurrently in C# and makes extensive use of the .Net Framework, including WCF, as well as open source software. The product is licensed for in-office use, though we expect it would scale well given appropriate resources.

Undergraduate Research – Ann Arbor, MI, USA *September 2012-May 2013*
Researcher
Project Name: Detecting and Attributing Climate Change

- Worked with Nobel laureate Natalia Andronova on analysis of large sets of climate data in the Great Lakes Region. As a team, scraped data hosted by the National Oceanic and Atmospheric of Association's (NOAA) National Data Buoy Center (NDBC) and then derived various statistical averages. These values were then compared against various climate models in order to analyze the models' efficacy. We found that certain resolution limitations in current global climate models prevent them from being effective at the scale of the Great Lakes Region.

Michigan Club Tennis *May 2013-September 2013*
Vice President, Match Coordinator, Travel Coordinator

- Managed a number of the day-to-day activities of the team, and guided the overall vision of our team’s interaction with club tennis teams at other schools and with other relevant organizations, such as the United States Tennis Association (USTA), which sponsors “tennis-on-campus”, and Michigan Club Sports, a University organization which provides funding and support. Organized the match schedule and managed travel plans. Coordinated the Fall Break trip to the Outer Banks, managing a group of roughly 40 attendees. The managerial experience has been significantly to the more industrial side compared to other endeavors, and seeing the functioning of the team from both sides of

the aisle (as a board member and player) has illuminated the challenges our organization faces and the strengths we leverage to address them.

Wilmette Tennis Academy -- Wilmette, IL, USA *May 2011-August 2013*
Founder, manager, and instructor

- Coordinated and taught national-level junior tennis players roughly 5-10 hours per week.

Hackathons

Pennapps – University of Pennsylvania *January 2013*

- Best Civic Improvement App and Top 20 Finisher (for SmoothRide): We created a hardware-based hack to detect and report the location of potholes encountered by cyclists. We built a bike attachment which senses when the bike goes over potholes, sending accelerometer data over blue-tooth to a user's cellphone, where the data is geo-tagged using a phone's GPS in an application we wrote. The app analyzes the data to determine whether the bike went over a pothole. If the user encountered a pothole, the geo-tagged data is sent to a map application, where the resultant data is plotted. The results can be sent to local authorities to report the location and prevalence of potholes. The mapping API we used also allowed us flexibility in calibrating how the reports are interpreted, giving us the ability to require thresh-hold quantities of reports in a given region before a pothole is "confirmed". We used an arduino, blue-tooth module, Android application (written in Java), and Ushahidi's Crowdmap service to create the application.

MHacks – University of Michigan *February 2013*

- We designed and built stumblebook.com, a new way to interact with Facebook photos. We created a web-app for randomly scrolling through friends' photos. The insight behind the project lay in the fact that Facebook has massive collections of old, under-viewed photos. By eliminating the user's control over what they see, we unlock vast stores of nostalgic content. The web-app relied on a Javascript and JQuery frontend to scrape photos using Facebook's developer API.

Personal Projects

Wrote a Scheme interpreter in the Haskell language as an exercise to learn more about functional programming and interpreter/compiler design. Also, I am studying *Structure and Interpretation of Computer Programs* by Gerald Sussman et. al. and *Types and Programming Languages* by Benjamin Pierce.

Activities

- Tennis:
  - National Tournament Doubles 3rd Place—Boys 18's USTA Regional Segment (July 2011)
  - High School Doubles 3rd Place—IHSA Illinois State Championships
  - High School Team accomplishments: State and National Champions 2010, 2011
  - College Club Tennis: USTA National Championships 3rd Place (2013), 17th Place (2014), 11th Place (2015); USTA Midwest Regional Champions (2013, 2014), Finalists (2015)

- Research Community (Fall 2012-Winter 2014)
    - Worked as a peer mentor in the Michigan Research Community, a residential program at the University of Michigan, through which I also participated in the climate change research mentioned above. I help four freshman navigate the transition to college and offered advice regarding finding and succeeding in their research endeavors.

- Volunteering and Mentoring (Fall 2012 – Present):
    - Volunteer weekly at Math Circle, a University program to encourage middle- and high-school students in mathematics. Along with a professor, we prepare a 90-minute discussion about a miscellaneous mathematics topic (no background, except occasionally the previous week's activities are required).

Languages

English (fluent), Polish (fluent), French (conversational), C/C++ (proficient), C# (proficient), JavaScript/TypeScript (proficient), bash (proficient), Scheme/Racket (intermediate), XSLT (intermediate), HTML/CSS (intermediate), Haskell (beginner), PowerShell (beginner), Python (beginner).

Awards

- National Merit Finalist—awarded by the College Board to the top 1% of scores
- National AP Scholar—received a score of 5 on 9 AP tests
- High School Honor Roll—4.0 Weighted GPA or higher
- Clarence E. Groesbeck Memorial Scholarship (University of Michigan)
- Eta Kappa Nu (EECS Honor Society)