

Vlas Zyrianov

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EDUCATION

University of Illinois at Urbana-Champaign	2020-2026
Ph.D. studies in Computer Science (GPA: 4.0).	
Kent State University	2019-2020
BS in Computer Science, Summa Cum Laude (GPA: 3.9).	
Ohio College Credit Plus Program, Kent Roosevelt Highschool	2016-2019
Dual enrolled at Kent State University and high school.	

PUBLICATIONS

Conference Papers

Zyrianov, V., Guarnera, D.T., Peterson, C., Sharif, B., Maletic, J.I., (2020) “Automated Recording and Semantics-Aware Replaying of High-Speed Eye Tracking and Interaction Data to Support Cognitive Studies of Software Engineering Tasks”, in the Proceedings of the 36th IEEE International Conference on Software Maintenance and Evolution (ICSME), Adelaide, Australia, Sep. 27-Oct. 3, 10 pages.

- Received ICSME 2020 IEEE TCSE Distinguished Paper Award

Zyrianov, V., Newman, C., Guarnera, D.T., Collard, M.L., Maletic, J.I., (2019) “srcPtr: A Framework for Implementing Static Pointer Analysis Approaches”, in the Proceedings of the 27th IEEE International Conference on Program Comprehension (ICPC), Montreal, Canada, May 25-26, pp. 144-147.

Sharif, B., Peterson, C., Guarnera, D.T., Bryant, C., Buchanan, Z., Zyrianov, V., Maletic, J.I., (2019) “Practical Eye Tracking with iTrace”, in the Proceedings of the 6th ACM International Workshop on Eye Movements in Programming (EMIP), Montreal, Canada, May 27, pp. 41-42.

INDUSTRY EXPERIENCE

Software Engineer Jun 2020-Jul 2020

AiR Everywhere (Augmented Reality Startup), Kent, OH

- Developed internal and customer facing metrics dashboard website using Blazor, C#, and Bootstrap.
- Implemented metric endpoints in the ASP.NET Core API.

Software Engineer Intern Jan 2020-Jun 2020

AiR Everywhere (Augmented Reality Startup), Kent, OH

- Worked in a fast-paced agile environment on a full stack augmented reality social media app.
- Primarily worked on building and developing unit tests for the backend API, which is written in C# using ASP.NET Core and interfaces with AWS DynamoDB.
- Added features to the frontend app (written with the Unity Game Engine) by leveraging and extending pre-existing components.
- Developed internal tool to provide administrator-level access to the API in C# WPF.

RESEARCH EXPERIENCE

iTrace Eye-tracking Infrastructure 2018-2020

Kent State University

- NSF-funded project to develop “an infrastructure that combines eye tracking into integrated development environments to study software development and program comprehension,” CNS 17-30181, PIs: Dr. Jonathan Maletic and Dr. Bonita Sharif.

- Developed a pipeline in C# for collecting gaze data from multiple brands of eye trackers, processing the data into a unified format, and then either writing the data out to a file in an XML format or sending it to plugins connected over TCP sockets or web sockets. Research resulted in a paper at ACM EMIP'19.
- Invented a novel method of collecting environment data at high eye tracker speeds. Implemented in a tool called Déjà Vu, which used the Win32 API to capture all low-level computer interaction events and replay them (alongside gaze events) at a slower rate. Research resulted in a paper at IEEE ICSME'20.

srcPtr Pointer Analysis Tool

2016-2018

Kent State University

- Worked in Dr. Jonathan Maletic's lab (SDML) on an NSF-funded project to "enhance the srcML Infrastructure: A multi-language exploration, analysis, and manipulation framework," CNS 13-05292.
- Created srcPtr, a pointer analysis tool
- The tool uses a novel method of analysis: it parses srcML (raw code marked up with its AST), generates a simplified model of the code's execution, and runs pointer analysis algorithms on it.
- Research resulted in a paper in IEEE ICPC'19.

TEACHING EXPERIENCE

Graduate Teaching Assistant for CS225: Data Structures

Aug 2020-Dec 2020

University of Illinois at Urbana-Champaign

Presented materials and organized student group-work during lab, responded to questions on online forum, and assisted in debugging during office hours.

Substitute Lecturer for CS II Data Structures & Abstraction (CS23001)

September 30, 2019

Kent State University

Gave one lecture on dynamic memory and RAII in C++ to a class of 70 students.

CS II Lab Instructor Assistant

Jan 2018-May 2018

Kent State University

Assistant for once-a-week lab during the spring term. Presented materials, graded student work, and responded to student questions.

Substitute for CS II Lab Instructor

October 6, 2016

Kent State University

Gave one talk on pointers and answered questions

SERVICE

Student Volunteering

IEEE 35th International Conference on Software Maintenance & Evolution 2019 (ICSME'19), Cleveland, Ohio

Clubs

Vice President of the Kent State University College Credit Plus Student Organization

Ad Hoc Reviewer

ACM Symposium on Eye Tracking Research & Applications (ETRA'19)

IEEE 34th International Conference on Software Maintenance & Evolution (ICSME'18)

IEEE 33rd International Conference on Software Maintenance & Evolution (ICSME'17)

PERSONAL SOFTWARE PROJECTS

Online Asynchronous Interview System

2020

- A work-in-progress online interview system

- Company HR manager can login and create interviews out of predesigned questions.
- Applicants can take interviews via a URL the HR manager sends out. The applicant's verbal answers are recorded and streamed to a Google Cloud bucket.
- The HR manager can then listen to and assess applicant responses through a dashboard.
- Built with NodeJS and ExpressJS in the backend, VueJS and Vuetify in the frontend, and is deployed on a Google Cloud Compute Engine virtual machine.

File Compressor

2019

- Compresses arbitrary files (including binary). For text files size is generally decreased by ~50%
- Implements Huffman coding and a work-in-progress LZW-like compression algorithm
- Written in C++

Bukva

2018

- Tool to let user type in any language; Performs real-time transliteration between any two language writing systems based on a customizable config file (currently supports English to Russian, Greek, Uzbek, and Kyrgyz).
- Written in C# and utilizes the WinAPI.
- Available to download at: www.bukva-translit.com

Speakeasy Local Chat

2018

- Led a team of 8 students to develop a location-based chat app.
- Features a single global chat room where users only receive messages if they are within a certain radius of the message sender.
- Uses the HTML5 geolocation API for location data, python and flask on the backend, and web sockets to facilitate communication.

AWARDS, SCHOLARSHIPS, AND FUNDING

1st place at the 2017 Kent State Undergraduate Research Symposium in the Computer Science / Math category

3rd place solo at the 2018 MLH Kent Hack Enough Hackathon

2019-2020 Kent State University Honors and Trustee Scholarships

National Science Foundation Research Experience for Undergraduates (REU, CNS 13-05292) Summer 2019–Fall 2019

National Science Foundation Research Experience for Undergraduates (REU, CNS 13-05292) Fall 2018–Spring 2019

Kent State University Summer Undergraduate Research Experience Stipend 2017

SKILLS

Programming Languages

C#, C++, Python, Javascript, HTML, CSS, SQL, x86

Libraries / Systems

ASP.NET, STL, Win32, Flask, DynamoDB, MongoDB, Google Cloud Platform, VueJS, Bootstrap, Blazor, srcML, OpenGL, Numpy

LANGUAGES

English	Native
Russian	Native
Chinese	Beginner