

# Vlas Zyrianov

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## EDUCATION

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

## PUBLICATIONS

### Conference Papers

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 27<sup>th</sup> 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 6<sup>th</sup> ACM International Workshop on Eye Movements in Programming (EMIP), Montreal, Canada, May 27, pp. 41-42.

### Accepted 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 36<sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME), Adelaide, Australia, Sep. 27-Oct. 3, 10 pages.

## 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** Spring 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**

#### **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 fall 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 34<sup>th</sup> International Conference on Software Maintenance & Evolution (ICSME'18)

IEEE 33<sup>rd</sup> 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](http://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**

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

3<sup>rd</sup> 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

### **LANGUAGES**

English	Native
Russian	Native
Chinese	Beginner