

# Vlas Zyrianov

vlasz2@illinois.edu

www.zyrianov.org

## EDUCATION

<b>University of Illinois at Urbana-Champaign</b>	2020-2026
Ph.D. studies in Computer Science (in progress, GPA: 3.9).	
<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., 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.

- 25% Acceptance Rate
- 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 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.

## INDUSTRY EXPERIENCE

**Software Intern (Shader Compilers)** (In Progress) May 2021-Jul 2021  
*Nvidia*, Santa Clara, CA

**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 developing and testing 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 with 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. Project website: <http://www.i-trace.org>. 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-May 2021

*University of Illinois at Urbana-Champaign*

Gave lecture and organized student group-work during lab; managed Course Assistants 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 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

### 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)

## 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

## COURSEWORK

### University of Illinois at Urbana-Champaign

CS445 Computational Photography  
CS598PS Machine Learning for Signal Processing  
CS446 Machine Learning  
CS526 Advanced Compiler Construction

## 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, PyTorch

## LANGUAGES

English	Native
Russian	Native
Chinese	Beginner