# Vlas Zyrianov

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## EDUCATION

**University of Illinois at Urbana-Champaign** 2020-2026
Accepted to Ph.D. studies in Computer Science beginning in Fall 2020.

**Kent State University** 2019-2020
BS in Computer Science, Summa Cum Laude (GPA: 3.92).

**Ohio College Credit Plus Program, Kent Roosevelt Highschool** 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 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.

## WORK IN PROGRESS

Zyrianov, V., Guarnera, D.T., Sharif, B., Maletic, J.I., "Déjà Vu: Data collection at high eye tracker speeds"

## 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.

**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 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

## LANGUAGES

| | |
|---|---|
| English | Native |
| Russian | Native |
| Chinese | Beginner |