Suhrab Kurbanov

Software Engineer

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International Science Olympiad Medalist and experienced **Software Engineer** with strong data structure, algorithm, and problem solving fundamentals.



Professional Summary

- Extensive experience in development of scalable, responsive Web-based, Mobile and Client-Server Applications.
- Expert level skills in user interface (UI) component development using **HTML5**, **CSS3**, **JavaScript**, **TypeScript**, **React**, **Redux**, **Bootstrap**, **Sass**, **Less**.
- Strong experience in building powerful interactive visualization applications, which allow **multi-dimensional (2D, 3D, etc...) rendering** of large cross-domain data, through graphics computation on **GPUs** using **WebGL, GLSL** and WebGL-based framework, **Three.js.**
- Expertise in developing fast, responsive **GPU-Accelerated Interactive 2-D Painting**, **Note-Taking**, **Photo-Editing** Web Applications using **HTML Canvas**, **THREE.js**, **WebGL**.
- Solid knowledge of CSS and Media Queries to create responsive websites for different devices.
- Deep experience with front-end tools such as Babel, Webpack, NPM, Yarn, Gulp, Grunt, ESLint, Prettify.
- Experience with maintaining relational Database such as PostgreSQL and NoSQL Database such as MongoDB, using server-side languages such as Python (Django) and Node.js (Express), respectively.
- Expertise in Object Oriented Programming (OOP) languages, such as **Python** and **Java**.
- Experienced in Agile Scrum Methodologies and working in Sprint cycles.
- Detail-oriented, team player, self-motivated, dedicated, open to learn and share the knowledge.



Experience

2019-02 - Fullstack Developer

present

Bluware, Inc

- One of the few developers, who paved the way to Bluware's InteractivAI from day one, state-of-the-art technology in the field of geo-science, which enables interactive visualization and interpretation of huge, multi-dimensional (2D and 3D) subsurface datasets (volumes) in real-time with deep-learning technology. Some of the companies implementing InteractivAI: British Petroleum, Shell.
- Played a key role in architecture and development of **GPU-accelerated**, **multi-dimensional visualization** front end of InteractivAI, using **React.js**, **HTML Canvas**, **TypeScript**, **WebGL**, **GLSL** and **Three.js** technologies.
- Extensively performed **geo-scientific research** and developed **novel methods** to build **smooth**, **pixel-perfect seismic data interpretation tools**, taking advantage of Linear Algebra and well-established **algorithms** and **data structures** including but not limited to Dijkstra, Flood Fill, DFS, BFS, Cubic Interpolations, Bresenham's algorithms, Edge Detection, Trees, Tries, Heap, Sets, HashMaps, Arrays and many more.
- Developed a **chunking/splitting strategy** of huge subsurface datasets in backend for **optimal delivery**, **rebuild** and **rendering** in frontend for **smooth UX**.
- Played an integral part in **RESTful API design** and **development** for data interpretation tools of InteractivAI.
- Created and maintained a rich suite of HTML5 UI components used over our growing product lineup.
- Adapted and applied well-established clean code techniques, design patterns, and object-oriented design techniques (OOP) to solve commonly occurring problems throughout the software design and development in both front end and back end.
- Evangelized good web architecture, to help educate other teams on web best practices.

2017-06 - **Python Developer & Bioinformatics Programmer**

2018-08 North American University, Department of Computer Science

- Developed and designed Genomics and Proteomics web applications using Python Django, React,
 TypeScript, Redux, Babel, Gulp, Webpack and Node.
- Implemented **Advanced React Component Patterns** to make highly interactive, simple and flexible components.
- Extensively used **Lodash** library for sorting data in application's Table components.
- Built client- and server-side search components with paginated data fetched from Ensemble **REST API** using **Axios** library.
- Optimized components for maximum performance across a vast array of web-capable devices and browsers.
- Automated generation of input files for AutoDock Vina and visualization of these files with **Python** Molecular Viewer or PyMOL.

2015-11 - Fullstack Developer

2017-06

Antivlia LLC

- Revamped UI and app interface of an electronics selling e-commerce site, with **25,000+** unique visitors per month, using **Python Django**, **ReactJS**, **JavaScript**, **ES6**, **HTML5**, **CSS3**, and **Redux**.
- Contributed to the development of mobile e-commerce app using **React Native** and **Redux**.
- Developed online deal locator, catcher, detector and checkout application using Python.
- Developed UI and backend of PC price predicting web app using **React** and **Python**.
- Developed web scraping programs using **Python** for collecting competitive data.
- Designed and developed **Python** scripts that **automates** inventory purchasing, listing and selling.
- Optimized sourcing efficiency of products, resulting in a **significant annual revenue increase.**

2012 - Graduate Research Assistant & Bioinformatics Programmer

2017

Baylor College of Medicine, Texas Childrens Hospital

- Extensively used Python and R to analyze obtained results from research and performed statistical analysis.
- Identified role of the CD1d-restricted Natural Killer T cells in the immune response to Salmonella-based recombinant cancer vaccines
- Developed a cancer vaccine using attenuated Salmonella and type III secretion system to deliver recombinant tumor-associated antigens



- > Languages: HTML5, CSS3, JavaScript, TypeScript, Python, Java, GLSL
- > <u>Tools, Frameworks, and Libraries:</u> HTML Canvas, React.js, Node.js, WebGL, THREE.js, Django, Redux, Bootstrap, Material-UI, Tachyons, Semantic-UI, Webpack 5, Grunt, Gulp, REST, RESTful
- > **Databases:** PostgreSQL, MongoDB
- > Version Control: Git, GitHub
- > Testing Tools and Frameworks: PyTest, Jest, Enzyme

Education

2018 - **North American University, Houston, TX**

2021 **Master of Science** in Computer Science

GPA: 3.55 / 4.0

2011 - **Baylor College Of Medicine, Houston, TX**

2017 **PhD Candidate** in Immunology

Fatih University, Istanbul, Turkey

2011 **Bachelor of Science** in Biology with a minor in Bioengineering

GPA: 3.87 / 4.0

Honors: Ranked **1st** in the department throughout 4 years



Recent Personal Websites and Fun Projects

Master's Capstone: GPU-Accelerated Interactive 2-D Painting, Note Taking and Photo Editing Web Application (React, TypeScript, WebGL, GLSL; haven't deployed yet)

Portfolio (Django, JS, http://SuhrabK.com)

GenomeTools (Django, JS, https://genomics-tools-app.herokuapp.com/)

MemoryGame (https://suhrabjan.github.io/memoryGame/)

SnakeGame (https://suhrabjan.github.io/snakeGameForMyKids/)

GravitationalStarShower (https://suhrabjan.github.io/star_shower/)

DynamicResponsiveCircles (https://suhrabjan.github.io/DynamicResponsiveCircles/)

BulkImageResizer (https://pypi.org/project/BulkImageResizer/)

RSSReader (React Native, haven't deployed yet)

CarBookingApp (React Native, haven't deployed yet)

ImageSharingApp (React Native, haven't deployed yet)

GuitarTunerApp (React Native, haven't deployed yet)

MessagingApp (React Native, haven't deployed yet)

ParrotInTheCaveGame (*React Native, haven't deployed yet*)

E-CommerceApp (*React Native, haven't deployed yet*)

SocialWebsite (ReactJS and Django)

OnlineShop (ReactJS and Django)

E-LearningPlarform (ReactJS and Django)



Awards and Achievements

2007 Won **Bronze Medal** in International Biology Olympiad, Saskatoon, Canada

2006 Honorable Mention in International Biology Olympiad, Rio Cuarto, Argentina

Leonid S. Metelitsa. Cancer Research, 2014 Nov 1;74(21):6260-70.

Gold and Silver medals in National Biology Olympiad of Turkmenistan

Publications

"Development of an Effective Cancer Vaccine Platform Using Attenuated Salmonella Typhi". Xin Xu, Michael S Wood, **Suhrab Kurbanov**, James E Galen, and Leonid S. Metelitsa. Molecular Therapy, 2017 May, 25(5):359-359

"Development of an Effective Cancer Vaccine Platform Using Attenuated Salmonella To Deliver Recombinant Tumor-Associated Antigens." Xin Xu, Michael S Wood, **Suhrab Kurbanov**, Linjie Guo, Xiuhua Gao, James E Galen, and Leonid S. Metelitsa. Molecular Therapy, 2016 May Volume: 24 / Pages: S74-S75.

"Development of an Effective Cancer Vaccine Using Attenuated Salmonella and Type III Secretion System to Deliver Recombinant Tumor-Associated Antigens." Xin Xu, Wael Abdel Halim Hegazy, Linjie Guo, Xiuhua Gao, Amy N. Courtney, **Suhrab Kurbanov**, Daofeng Liu, Gengwen Tian, Edwin R. Manuel, Don J. Diamond, Michael Hensel, and

"Potent Therapeutic Activity of a Novel Salmonella-based Cancer Vaccine." Xin Xu, Wael Hegazy, Xiuhua Gao, Linjie Guo, Amy Courtney, **Suhrab Kurbanov**, Micheal Hensel, and Leonid S. Metelitsa. Journal of Immunology, 2013, 190, 45.5



Reference

References are available upon request