Jonas P. Knochelmann

Software Engineer Recent Graduate | Computer Science Researcher

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Summary

Recent computer science graduate from the University of Utah. 2 years of professional experience developing tools in C#, Java, and Python, academic research, teaching full-stack web development, and contract coding. 6+ personal projects and 10+ years of programming.

Professional Experience

QED Lab | Research Engineer | 03/2022 - 05/2024

The Quantitative Experience Design (QED) Lab conducts varied research into AI and human-centered computing, regularly publishing at major academic venues.

- Created a complex DSL with C# and ANTLR in ~4000 lines of code
- Programmed 3 math tools over 12 months of research with Java and Python
- Published 1 peer-reviewed paper as first author, and worked on 3 others

Salt Lake Community College | Corporate Trainer | 04/2021 - 10/2022

Salt Lake Community College offers accessible education to Utah, providing for-credit college classes, certifications, and workforce training.

- Taught 3-hour classes on web development toward a web development certificate
- Prepared 6 months of lessons on HTML, CSS, JavaScript, WordPress, and PHP
- Tutored dozens of diverse students from beginner to advanced in classes up to 15

Eptura | Programmer, Independent Contractor | 08/2021 - 07/2022

Eptura is a software company that provides a workplace management suite.

- Integrated localization tools across 5+ applications
- Developed a tool to automatically find unlocalized code across 10,000+ lines
- Modified code in TypeScript, PHP, ColdFusion, HTML, and others

Projects

Bronco Text Generator | Project Lead

github.com/qed-lab/Bronco-Text-Generator

Bronco is a DSL for designing grammar-based text generators.

- Secured nearly $7,000 in funding to lead this project over 12 weeks
- Implemented a library and IDE in over 3,000 lines of C# and ANTLR

BIT4D | Personal Project

github.com/qed-lab/Bronco-Text-Generator

Back In The 4th Dimension (BIT4D) is a library for rendering 4D objects.

- Designed a GPU algorithm for rendering millions of shapes in real-time
- Customized file format for efficient access to a library of 100s of 4D objects

Colder On Mars | Personal Project

colder-on-mars.s3-us-west-1.amazonaws.com/index.html

Colder On Mars is a tiny web applet I made to practice web development.

- Created with 3 APIs and a graphics library in JavaScript for unique function
- Hosted on Amazon Web Service in an S3 bucket

Blender Projects | Various

jonaspknoch.github.io/blender

I've been using Blender for over 10 years, and these are 4 of my biggest projects.

- Used Python API, Node Editor, and 3+ other tools for automated workflow
- Designed 3+ tools and visualizations for a $3,000+ funded research project

Education

University of Utah | Bachelor's of Science in Computer Science | 2024

The University of Utah is Utah's flagship institution, and this program is ranked among the top 100 in the nation.

- Undergraduate Research Scholar Designation (1 of 7 my year)
- Dean's List

Certifications

Microsoft Certified: Azure Data Scientist Associate certification | 2024 | ID: 1100127052

learn.microsoft.com/en-us/credentials/certifications/azure-data-scientist

Skills

C# | Java | Python | C | JavaScript | HTML | CSS | PHP | Godot Script | GLSL | Visual Studio | VSCode | WordPress | Blender | Godot | Unreal Engine

Other Links

Portfolio | jonaspknoch.github.io

GitHub | github.com/JonasPKnoch

Publications

Bronco: A Universal Authoring Language for Controllable Text Generation

jonaspknoch.github.io/files/knochelmann2022bronco.pdf

GTPCG: Generating Objects from Mathematical Description

jonaspknoch.github.io/files/GTPCG.pdf

Exploring group theory for use in procedural content generation

jonaspknoch.github.io/files/GTPCG%20Poster.pdf