CHASE MILLER

JUNIOR SOFTWARE DEVELOPER

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experience

ReFrame Solutions • Junior Developer
Sep 2024 - Present • Windsor, CT

The School of Swimming • Team Leader
Apr 2023 - Aug 2023 • Rocky Hill, CT
- Resolved communication challenges for students and parents
- Provided guidance to the team
- Coached team members when needed
- Provided regular feedback and recognition
- Maintained composure and handled emergency situations responsibly

The School of Swimming • Swim Instructor and Lifeguard
Apr 2019 - Aug 2023 • Rocky Hill, CT
- Taught swimming to children and adults in a safe, friendly environment
- Communicated feedback to students and parents on a daily basis with enthusiasm
- Evaluated progress of students and provided encouragement throughout the lessons
- Trained in Red Cross Lifeguarding, First Aid, and CPR

projects
*Project still under development

Exploring Longest Common Subsequences and the Chvátal-Sankoff Constants
This was my *Major Qualifying Project* (MQP). State-of-the-art lower bounds are provided for numerous Chvátal-Sankoff constants, with particular attention paid to the Chvátal-Sankoff for two binary strings. Accompanying this are proofs of various properties describing the effect of modifying a pair of strings on their longest common subsequence.

From Sight to Sound*
This was my *Interactive Qualifying Project* (IQP). It is a tool that converts drawings, paintings, digital images, and photographs into musical composition using Markov chains and machine learning. The essence of the visual art is meant to be retained and captured in the output piece.

Software Engineering Collaboration with Brigham & Women's Hospital
As the lead software engineer, I was the technical leader of an eleven-person student team working to apply Agile development methodologies and software design patterns in Java to create a medical equipment tracking and workflow application that included a hospital dashboard, floor map editor, and multiple integrated service request modules for Brigham & Women's Hospital. The software systems the team created were to inform the hospital representatives about potential features, user interfaces, or design approaches that they might consider implementing. Additionally, I helped gather software requirements, created user stories, managed Git merge conflicts, and kept the team motivated.

JavaNoise API 2.0.0
A Java library designed around the concept of pseudo-randomness. Features five noise functions with four fractal modifiers, three random number generators, a noisemap generator, and a data randomizer modeled on common probability distributions.

Betterboxd*
Intended to be a successor of the movie rating site Letterboxd. Improves upon features already present within Letterboxd, implements new features, and additionally allows for TV series and album ratings to allow for a more holistic approach to interacting with narrative media.

skills

Programming Languages:
Java, Python, C/C++, C#, Javascript, Typescript, HTML, CSS, PHP, SQL

Libraries and APIs
JavaFX, Apache Commons, Aspose.Imaging, NumPy, SciPy, .NET, jQuery, Angular, Bootstrap, Tailwind, OpenGL, OpenCV

Software:
Microsoft Office, Photoshop, Illustrator, InDesign, After Effects, Affinity Photo, Affinity Designer, Affinity Publisher, Figma, Final Cut Pro X, Blender

Soft Skills:
Communication, Creativity, Flexibility, Teamwork, Problem Solving, Organization, Leadership, Time Management, Dependability

interests
- Machine Learning
- Language Construction
- Graphic Design
- Video Games
- Music Composition and Piano Playing

honors and awards

Member of Upsilon Pi Epsilon Honor Society
Inducted into the Massachusetts Alpha Chapter

Provost's MQP Award in Computer Science
Won for "Statistics of Subsequences" undergraduate research

education

May 2024

BACHELOR OF SCIENCE (B.S.) IN COMPUTER SCIENCE
CONCENTRATION: THEORY AND MATHEMATICAL FOUNDATIONS

GPA **3.88**

Worcester Polytechnic Institute,
Worcester, MA

Relevant Coursework
Discrete Mathematics, Analysis of Algorithms, Programming Languages, Foundations of Computer Science, Theory of Computation, Software Engineering, Computer Graphics, Digital Imaging and Computer Art

Jun 2020

HIGH SCHOOL DIPLOMA
GPA **3.86** (Top 10 Scholar)
Wethersfield High School,
Wethersfield, CT