

# Ryan Parker

MS Computer Science Student at UVM

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| <b>Contact</b><br><br>RyanParker196@gmail.com<br>Github: RyanParker196<br>Phone: (802) - 310 - 5031   | <b>Portfolio:</b> <a href="https://ryanparker196.github.io/portfolio/">https://ryanparker196.github.io/portfolio/</a><br><br>I enjoy working collaboratively and using new and interesting technologies to solve complex problems. I'm passionate about functional programming, theorem proving and artificial intelligence.  |
| <b>Education</b><br><br><b>Masters of Science</b><br>Computer Science<br>Expected Graduation: Dec 2021<br><br>Graduate level coursework: <ul style="list-style-type: none"><li>• iOS App Development</li><li>• Secure Distributed Computation</li><li>• Computer Vision</li><li>• Differential Privacy</li><li>• Software Verification</li><li>• Compiler Construction</li><li>• Data Structures &amp; Algorithms</li></ul><br><b>Bachelors of Science</b><br>Computer Science<br>(Jan 2017 - Dec 2020) | <b>Work Experience</b><br><br><b>Research Assistant at UVM</b> (Aug 2019 – Present)<br>Advisor: Dr. Francois Dorais <ul style="list-style-type: none"><li>• Using Lean, a functional programming language to perform static analysis and verify properties of non-deterministic finite state automaton</li><li>• Refactoring code to enhance readability and adapting to improvements in Lean 4's tactics space</li><li>• Contributing to Lean 4's open source documentation</li><li>• Working collaboratively as part of a research team using Git and an Agile development cycle</li></ul><br><b>Remote Instructor at iD Tech</b> (June 2019 - Present) <ul style="list-style-type: none"><li>• Teaching online programming classes to kids aged 10 to 17 using Python's PyGame library for game development as well as creating custom Mods in games such as Minecraft Java Edition</li><li>• Teaching game development concepts and scripting with LUA in Roblox studios</li><li>• Developed lesson plans and project for future curriculum</li></ul> |
| <b>Technical Experience</b><br><b>Concepts:</b><br>Agile Development<br>Object Orientated Programming<br>Functional Programming<br>REST API<br><br><b>Tools</b> (Most experienced) :<br>Git, Haskell, Python, React, SQL, VS Code, Vim, Linux(Ubuntu)<br><br><b>Tools</b> (Some experience):<br>Java, Scala, C++, C, Docker, Django, Idris, Elm, PyTorch  | <b>Projects</b> <ul style="list-style-type: none"><li>• Automatic differentiation program implemented in Haskell with both forward and reverse mode</li><li>• Using PyTorch and Word2Vec to create a deep learning model for natural language processing to detect toxicity in Reddit comments</li><li>• Programmed a formal proof of the Chinese Remainder Theorem using static verification in Agda</li><li>• Designed my own type safe programming language with a compiler written in Haskell</li><li>• Formal verification of a zero knowledge proof protocol for an anonymous bidding simulation</li><li>• Created my personal portfolio website using React</li><li>• Built a simple e-commerce demo website using Elm</li><li>• Completed NVIDIA's course "An Intro to Deep Learning"</li><li>• Completed MathWorks Artificial Intelligence On-Ramp</li></ul>   |