

Education	<p><b>Yale University</b> <span style="float: right;">May 2023</span>          B.S. Computer Science, Summa Cum Laude (New Haven, CT)</p> <p><b>Coursework</b> Algorithms, Data Structures, Systems Programming, Operating Systems, Linear Algebra, Computer Graphics, Physics Sims for Movies, Graphic Design</p> <p><b>Leadership</b> Co-President – Design at Yale, Creative Director – <i>The New Journal</i></p>
Experience	<p><b>Software Engineer Intern</b> <span style="float: right;">May 2022 – Aug 2022</span>          Meta, Reality Labs (Burlingame, CA)</p> <ul style="list-style-type: none"> <li>Improved the scalability &amp; storage of spatial maps in the SLAM stack of Meta's <i>Presence Platform</i>.</li> <li>Integrated coarse and fine location sources to reduce the performance cost of localization on next-gen Oculus VR/MR headsets. Considered power draw and on-device memory limitations.</li> <li>Used C++, Thrift cross-language protocol, Bash, adb debugging.</li> </ul> <p><b>Software Engineer Intern</b> <span style="float: right;">Jun 2021 – Aug 2021</span>          Facebook (Menlo Park, CA)</p> <ul style="list-style-type: none"> <li>Improved machine utilization &amp; fault tolerance by developing &amp; designing Python service to automatically rebalance containers in Twine, Facebook's cluster management system.</li> <li>Used by core infrastructure teams and freed up to 40k machines across all data centers.</li> <li>Used Python, Thrift, SQL, Twine scheduler.</li> </ul> <p><b>Software Developer</b> <span style="float: right;">Jun 2020 – May 2021</span>          Yale Peabody Museum (New Haven, CT)</p> <ul style="list-style-type: none"> <li>Led work on COPISClient, a desktop control app for a multi-camera photogrammetry system.</li> <li>Developed &amp; redesigned OpenGL rendering pipeline, reducing frame render times by &gt;80%. Developed &amp; designed GUI and 3D viewport, ViewCube navigation widget, scene object picking.</li> <li>Used Python, wxWidgets, OpenGL/GLSL. <a href="#">Project link</a>.</li> </ul>
Projects	<p><b>font.fish font explorer</b> <a href="https://github.com/inchkev/font-fish">https://github.com/inchkev/font-fish</a> <span style="float: right;">2023</span></p> <ul style="list-style-type: none"> <li>Developed &amp; designed font.fish, a web tool to visualize &amp; explore the entire Google Fonts repository using ML. Generated feature vectors using Inception v3, TensorFlow, and Keras.</li> <li>Reduced feature space to 2D using PCA, UMAP, and t-SNE reduction techniques.</li> <li>Built the website using JavaScript, Three.js, WebGL, and Flask. Live at <a href="http://font.fish">font.fish</a>.</li> </ul> <p><b>Watercolor simulation</b> <a href="https://github.com/inchkev/watercolor">https://github.com/inchkev/watercolor</a> <span style="float: right;">2022</span></p> <ul style="list-style-type: none"> <li>Developed real-time watercolor simulation in C++ with pigment flow effects based on the SIGGRAPH 1997 paper <i>Computer-Generated Watercolor</i>. Implemented edge darkening, backruns, blooming, and granulation. Built staggered grid, used forward Euler integration. <a href="#">Project link</a>.</li> </ul> <p><b>Distributed ray tracer</b> <span style="float: right;">2021</span></p> <ul style="list-style-type: none"> <li>Built a distributed ray tracer in C++ with diffuse/Phong shading, mirror/glossy reflections, refractions, soft shadows, and SSAA. Modeled &amp; rendered animation using CMU mocap dataset.</li> <li>Implemented bounding volume hierarchy (BVH) to accelerate ray intersections. <a href="#">Final video link</a>.</li> </ul> <p><b>WebVR interactive mathematics</b> <span style="float: right;">2019</span></p> <ul style="list-style-type: none"> <li>Developed interactive WebVR experiences to showcase 3D math functions in the <i>DLMF</i> dataset.</li> <li>Demoed at the SIGGRAPH 2018 BOF session "<i>Immersive Visualization for Research, Science and Art</i>". <a href="#">Project link</a>.</li> </ul>
Skills	<p><b>Programming</b> C++/C, Python, Rust, JavaScript/TS, Java, HTML/CSS. <i>Learning WebAssembly</i></p> <p><b>Tooling</b> Three.js, OpenGL, LaTeX, Figma, Adobe InDesign/Photoshop/Illustrator</p>