

# Hayden Choi

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## Education

<b>McMaster University</b> <i>Honours Computer Science Co-op, Bachelor of Applied Science (GPA: 3.9/4.0)</i>	Sep 2024 – May 2027 Hamilton, ON
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## Technical Skills

<b>Languages:</b> Python, JavaScript, Java, Ruby, C++, C, SQL
<b>Libraries/Frameworks:</b> Django, React, React Query, Node.js, Express.js, FastAPI
<b>Databases/Cloud:</b> Azure, AWS, MongoDB, Google Cloud Platform, Firebase, Render
<b>Tools/Methodologies:</b> Git, Docker, Linux, GraphQL, Cypress, Agile, Postman

## Experience

<b>Software Engineer Intern</b> <i>Knockri</i>	Dec 2025 – Present Toronto, ON
<ul style="list-style-type: none"><li>Architected an end-to-end <b>ReAct AI Agent</b> leveraging <b>IBM Watsonx Orchestrate</b> and <b>LLMs</b> for autonomous reasoning to reduce <b>83%</b> of total support tickets, cutting external support costs by <b>60%</b></li><li>Reduced transcription tool latency <b>74%</b> by resolving <b>N+1 GraphQL</b> queries and refactoring data-fetching architecture</li><li>Developed a secure proctoring suite utilizing <b>Django</b> and <b>React</b> for <b>10k+</b> sessions across <b>Fortune 500/Gov</b> clients</li><li>Implemented a <b>Heartbeat API</b> via <b>GraphQL/UUID4</b> to restrict <b>7,000+</b> duplicate launches via backend locking</li><li>Safeguarded production stability by writing <b>Cypress E2E</b> and <b>Django mock tests</b> for automated <b>CI/CD</b> regression</li></ul>	
<b>Software Engineer Intern</b> <i>Brighter Signals BV</i>	May 2025 – Aug 2025 Markham, ON
<ul style="list-style-type: none"><li>Developed a <b>Real-Time Data Pipeline</b> to ingest sensor telemetry for <b>F1</b> wear detection, improving accuracy by <b>64%</b></li><li>Built <b>5+</b> specialized GUIs for investor demos that secured <b>\$1.6M+</b> in funding for <b>MVP</b> development</li><li>Optimized <b>4-axis Control Logic</b> by prioritizing event-driven signal polling to reduce real-time gesture latency by <b>35%</b></li><li>Shifted <b>Signal Pre-processing</b> to embedded firmware to automate filtering, reducing frontend compute load by <b>76%</b></li><li>Co-authored an <b>IROS 2025</b> paper and named a <b>Best Poster Finalist</b> for research on data-rich tactile sensors</li></ul>	
<b>Software Engineer Intern</b> <i>Mania Immigration</i>	May 2024 – Sept 2024 Markham, ON
<ul style="list-style-type: none"><li>Architected <b>6+</b> <b>Full-Stack</b> apps via <b>Flutter/Firebase</b>, utilizing a <b>Factory Pattern</b> for reusable UI components</li><li>Boosted app responsiveness by <b>50%</b> by implementing <b>Deferred Loading</b> for complex navigation modules</li><li>Engineered a <b>Discovery Engine</b> via <b>Spotify REST APIs</b> that bypassed algorithmic bias for genre-isolated playlists</li><li>Migrated legacy <b>WordPress</b> infrastructure to <b>React.js</b>, refactoring monolithic pages into reusable components</li></ul>	
<b>Software Engineer Intern</b> <i>Broadcast Fantasia</i>	Jan 2024 – Apr 2024 Markham, ON
<ul style="list-style-type: none"><li>Developed custom <b>Shopify</b> integrations via <b>Liquid</b> and <b>JavaScript</b> to extend core storefront functionality</li><li>Leveraged <b>GraphQL</b> to execute optimized schema queries, improving data retrieval efficiency for product catalogs</li><li>Performed end-to-end debugging via <b>Chrome DevTools</b> to resolve UI/UX regressions and cross-browser bottlenecks</li></ul>	

## Projects

<b>SyllaScan</b>   <i>React, Python, OpenAI, AWS, FastAPI, Google Calendar API</i>	
<ul style="list-style-type: none"><li>Developed an <b>NLP pipeline</b> using <b>FastAPI</b> to parse unstructured PDF syllabi into validated <b>JSON</b> schemas</li><li>Utilized <b>Prompt Engineering</b> strategies to extract complex date-event pairs with high accuracy via <b>GPT-4</b></li><li>Integrated <b>Google OAuth 2.0</b> and <b>Calendar API</b> to automate bulk event synchronization for academic schedules</li><li>Built a responsive <b>React</b> interface for real-time file uploads and interactive schedule previews before final sync</li></ul>	
<b>Twitter Clone</b>   <i>MERN Stack, React Query, Cloudinary, Tailwind CSS, Render</i>	
<ul style="list-style-type: none"><li>Architected a scalable <b>MERN</b> social platform featuring complex follow systems and real-time notification streams</li><li>Implemented <b>React Query</b> utilizing <b>Optimistic Updates</b> and API caching to minimize perceived frontend latency</li><li>Integrated <b>Cloudinary API</b> for optimized image processing and secure storage of user avatars and media-rich posts</li><li>Secured user sessions via <b>JWT</b> and <b>bcryptjs</b> with custom middleware-based route protection to ensure data privacy</li></ul>	
<b>Football Match Predictor</b>   <i>Python, scikit-learn, Pandas, NumPy</i>	
<ul style="list-style-type: none"><li>Trained a <b>Random Forest</b> classifier achieving a <b>12% precision lift</b> over baseline models for match predictions</li><li>Engineered <b>Rolling Average</b> features to capture team momentum and defensive strength across the last 3 fixtures</li><li>Developed a <b>Pandas</b> preprocessing pipeline to encode categorical variables like venues and opponent strength</li><li>Evaluated model reliability using <b>Precision</b> and <b>Recall</b> metrics to minimize false-positive win result classifications</li></ul>	