**Aayush K. Singh**

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**SKILLS**

**Machine Learning & AI**: Reinforcement Learning (Gymnasium, DQN), Transformers, NLP, Model Training & Evaluation, Data Preprocessing

**Programming & Frameworks**: Python, PyTorch, NumPy, OpenCV, Jupyter Notebook, Git

**Software Development**: Java, C++, C#, Node.js, REST APIs

**Frontend & Tools**: React, Next.js, JavaScript, HTML, CSS, Tailwind CSS, Bootstrap, GitHub, Vercel, Drupal

**Databases**: MongoDB, PostgreSQL (basic)

**EDUCATION**

Youngstown State University – Youngstown, OH

**Bachelor of Science in Computer Science** | Minor: Mathematics | GPA: 3.36 / 4.0

(Expected Graduation: **May 2026**)

**RELEVANT COURSEWORK AND CERTIFICATES**

* **React and Next.js**
* **Server-Side Web Development**
* **Data Structures and Algorithms (**CSCI 5870)
* **Game Programming (**CSIS 3737)
* **HTML, CSS, and JavaScript** (FreeCodeCamp)

**RELEVANT PROJECTS**

* [**Super Mario Reinforcement Learning Agent**](https://github.com/singhaayush01/mario-rl) **, Capstone project** *(Ongoing – Expected Completion: Nov 2025)*  
  • Building a reinforcement learning agent to autonomously play *Super Mario Bros* using the Gymnasium and PyTorch frameworks.  
  • Implemented environment preprocessing (frame resizing, grayscale, reward shaping) and training loop for level progression.
* [**TinyTextGPT – Gutenberg Text Transformer**](https://github.com/singhaayush01/TinyTextGPT-Gutenberg-Text-Transformer)**, Personal** **2025**

• Developing a Transformer-based language model from scratch using PyTorch and BPE tokenization.

• Training on classic literature from Project Gutenberg to understand attention mechanisms and sequence modeling.

* **Personal Portfolio Website, Personal 2025**  
  • Built a responsive personal portfolio using HTML, CSS, Bootstrap, and JavaScript.  
  • Deployed the site with GitHub Pages, showcasing professional projects and achievements.
* [**RSA Algorithm**](https://github.com/singhaayush01/RSA_E_D_Project)**, CSIS 2610 2022**  
  • Implemented a cryptography system using the RSA algorithm for secure encryption and decryption with public/private key pairs.  
  • Designed and tested the algorithm in C**++**, demonstrating practical knowledge of number theory and modular arithmetic.

**WORK EXPERIENCE**

**Web Developer, Cliffe College of Creative Arts, YSU Jan2023 - Present**

* Built and maintained responsive web pages using HTML, CSS, JavaScript, Bootstrap, and Drupal.
* Fixed bugs, optimized performance, and ensured cross-browser compatibility.
* Improved site accessibility (WCAG standards) and user experience for thousands of students and staff.
* Delivered faster load times and consistent UI across multiple YSU departments.

**Timeline Tech Tutor, Birgunj, Nepal Aug2021 - Nov2021**

* Taught basic computer skills and programming languages such as C++ to people new in technology.
* Provided bootcamps and other free resources to help students learn programming.

**HONORS AND AWARDS**

* **Academic Excellence Award,** YSU International Programs Office
* **Honors Award,** YSU Honors College
* **Dean’s List,** YSU

**LEADERSHIP ACCOMPLISHMENTS**

* **Co-Founder**, Mathematics Club
* **Member**, YSU COMPETITIVE PROGRAMMING CHALLENGE