# Jonathan Nguyen

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Highly motivated student deeply interested in machine learning, software engineering and data science. An internship would allow me to lend my problem-solving and analytical skills to help your company improve, whilst developing my skills in the computer science field.

## EDUCATION

WEST CHESTER UNIVERSITY OF PENNSYLVANIA West Chester, PA Exp. Graduation: May 2025

- Bachelor of Science in Computer Science
- GPA 3.83/4.0

## RELEVANT COURSEWORK

SOFTWARE ENGINEERING

- This course focuses on more advanced topics in object-oriented programming, including project design, planning, and testing using milestones and checklists

PROGRAMMING LANGUAGE CONCEPTS/PARADIGMS

- An examination of the conceptual underpinning of programming languages and of the paradigms into which they fall. Topics will be drawn from those comprising the field of programming language such as abstraction, bindings, concurrency, design, encapsulation, history, representation, storage, and types.

DATA STRUCTURES AND ALGORITHMS

- Topics include data abstraction, recursion, lists, stacks, queues, linked lists, trees, hashing, searching and sorting algorithms, and the evaluation of algorithm efficiency.

ARTIFICIAL INTELLIGENCE

- Topics will be drawn from any of those comprising the field of AI such as agent architectures, automatic truth maintenance, constraint satisfaction, expert systems, fuzzy logic, games, genetic algorithms, knowledge representation, machine learning, neural networks and connectionism, natural language processing, planning, reasoning, robotics, search, theorem proving, and vision.

DATA SCIENCE

- The course includes basic statistics, an intro to machine learning, and an intro to data visualization. Students will learn how to read different types of data files and use statistical tools and machine learning tools to analyze them

## EXPERIENCE

**Debate Judge and Coach** May 2018- May 2021

Charles F. Patton Middle School, Unionville High School – Kennett Square, PA

- Evaluated and provided structured feedback to 20 students, helping them improve their analytical thinking and communication skills through critical evaluation of debates and speeches.
- Guided students in developing speeches, enhancing their ability to organize thoughts logically and present ideas effectively—skills crucial for problem-solving in programming and software development.

- Collaborated with other coaches to organize debate scrimmages and competitions, improving team collaboration and streamlining practice sessions, similar to agile teamwork in tech environments.
- Managed multiple students and activities simultaneously, demonstrating strong time management and multitasking, applicable in fast-paced, project-based work environments.

## SKILLS

- **Programming Languages:** Java (Runtime Polymorphism, OOP), Python
- **Frameworks & Tools:** Apache Spark, Hadoop, VS Code, Jupyter Notebook, SQL, Linux
- **Concepts:** Data Structures, Algorithms, Software Development Lifecycles (SDLC)

## INVOLVEMENT

- Member of the Upsilon Pi Epsilon Honor Society
  - Recognized for academic excellence in the computer science curriculum
- Member of the WCU Computer Science Club
- Participated in multiple West Chester Programming Contests

## PROJECTS

Sleep Quality Analysis: Physical Activity and BMI Impact

- Tools Used: Python (Pandas, NumPy, SciPy, Matplotlib), Statistical Analysis (Mann-Whitney U, Spearman Correlation, Kruskal-Wallis, Dunn's Test)
- Dataset: Sleep Health and Lifestyle Dataset (Kaggle, 374 entries)
- Conducted a comprehensive analysis to explore the relationship between physical activity, BMI, and sleep quality using statistical techniques.
- Preprocessed data by combining BMI categories, checking for missing values, and ensuring data consistency through Pandas
- Performed Mann-Whitney U Test and Spearman Correlation to analyze the relationship between physical activity levels and sleep quality, finding a statistically significant but weak positive correlation ($r = 0.178$, $p < 0.001$).
- Used Kruskal-Wallis H-Test and Dunn's Test to compare sleep quality across BMI categories, identifying significant differences between Normal and Overweight groups ($p < 0.001$).
- Concluded that higher physical activity levels are associated with better sleep quality, and BMI plays a nuanced role in sleep health.
- **Key Skills:** Data preprocessing, hypothesis testing, statistical analysis, data visualization, and critical interpretation of results.