Crystal "Danikka" Jelski

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Education

Rutgers University- New Brunswick **Sep. 2022 – May 2026**
Bachelor of Science in Computer Science *New Brunswick, NJ*

- 3.91 GPA — Dean's List
- Events: HackHers 2023; CreateRU 2023 — Clubs: WiCS (Women in Computer Science); IEEE Electronics Division

Technical Skills

Languages: Java, C, Python, R, HTML/CSS, Javascript
Developer Tools: VS Code, RStudio
Technologies/Frameworks: Linux, React
Spoken Languages: English (native), Filipino (limited working proficiency)

Relevant Coursework

- Computer Architecture (C)
- Data Structures (Java)
- Intro to CompSci (Java)
- Discrete Structures I & II
- Data 101 (R)
- Calculus I & II
- Intro Linear Algebra
- Physics I & II

External Coursework

- CodePath's Intro to Cybersecurity Course (cert)

Experience

Rutgers Computer Science Department **June 2024 – May 2025**
Undergraduate Aresty Research Assistant *Piscataway, NJ*

- Assisting on a project which explores techniques to parallelize packet processing code across multiple CPU cores, and building compilers to translate code written for single CPU cores to run efficiently on multiple CPU cores.
- Continuously learning and adapting to new technologies and methodologies over course of project, which includes working with a high-speed packet processing framework (eBPF) and a compiler front-end (clang) that parses and transforms C source code.

Rutgers Computer Science Department **January 2024 – May 2024**
Discrete Structures I Grader *Piscataway, NJ*

- Worked with course professor and TAs (teaching assistants) to grade assignments and exams, answer student inquiries, proctor, proofread quiz questions, and respond to regrade requests.
- Graded assignments (p-sets and quizzes) and exams, and answered inquiries including and not limited to: foundations of mathematical logic and proofs, sets, functions, logic gates, modeling computation, and number theory.

YMCA of Montclair **May 2023 – March 2024**
Membership Services Representative *Montclair, NJ*

- Utilized "ReClique Core", a management cloud application. Managed membership registration, unit changes, and renewals efficiently, ensuring accurate data entry and transactions.
- Communicated effectively regarding inquiries with fellow staff, and the YMCA members and visitors.
- Conducted facility tours for visitors.

Bandila Studios, LLC **May 2022 – June 2022**
Project Intern *Remote*

- Collaborated with a team member to design a plausible data structure for a brand audit quiz that would vet the clients on their needs, such as their social media presence and marketing.
- Utilized Python for creating a point-system based "quiz" which depends upon factors of the client matching the scope of Bandila's web services, and HTML/CSS for front-end styling.

Relevant Projects

Infinity War | *Java* **April 2023**

- Implements and manipulates graph data structures through a series of tasks, which were tied to specific scenes from the movie "Avengers: Infinity War."
- In "LocateTitan," determined the min cost path from Earth (initial) to Titan (last) vertex. Used Dijkstra's Algorithm.
- In "PredictThanosSnap," determined if an undirected graph remains connected after randomly removing half of its vertices. Implemented Depth-First Search to check connectivity among the remaining vertices after the "snap."

Predicting Movie Ratings | *R* **Dec 2023**

- Built a prediction model to predict whether a movie will get "Great" rating or just "Average" rating using a training data set for a class competition. Attained 0.94985, with the highest score being 0.95, of matching the competition's testing data set.
- Utilized freestyle data analysis techniques such as data visualization and data preparation through functions such as "rpart" or recursive partitioning and regression trees, and other graph types like boxplots.

Predicting Future Salaries | *R* **Dec 2023**

- Built a prediction model to predict one's future salary based on categories such as college tuition, age, GPA, and geographical location. Attained an MSE of 149.86748 from the competition's testing data set.
- Utilized linear regression models and "rpart" or recursive partitioning and regression trees. Consolidated the predictions into one final decision vector.

Stacks, Queues, Trees, Graph Algorithms | C **Feb 2024**

- Uses and builds data structures and recursive function calls to continue from material in the Data Structures class, but in C. Graph algorithms and hashing algorithms, for instance, are implemented.
- Some of the tasks of the assignment included finding a cycle in a directed graph using depth-first search ("findCycle") and simulating the inventory and sales of a record store using a separate chaining hash table ("hashTable")

Representing and Manipulating Information | *C* **March 2024**

- Experiments with how computers carry out mathematical operations such as addition, subtraction, and multiplication on the data (binary) representations.
- Simulated the subtraction of 2 signed char (8-bit) integers and the conversion of non-negative integers between any two bases (up to 36).
- Decoded 32-bit binary strings representing IEEE 754 single-precision floating point numbers.
- Encoded real numbers as 64-bit IEEE 754 double-precision floating point numbers, which required normalization and denormalization techniques, and proper exponent encoding.

Simulating a Cache and Optimizing Programs for Caches | *C* **April 2024**

- Experiments with different cache designs, and see how they impact the ability for caches to create an illusion of fast access from the CPU to main memory.
- Simulated fully associative, direct-mapped, and 4-way set-associative caches.
- Optimized matrix multiplication using cache blocking techniques. Improved cache performance by reorganizing memory accesses to enhance locality.
- Implemented a cache-oblivious algorithm for matrix transposition.

Relevant Awards and Honors

SAS Excellence Award **May 2024**

Rutgers- New Brunswick

- Selected for a Rutgers College Scholarship determined by a distinguished academic record and submission of thoughtful, well-written essays addressing the topics provided in the application.

Dean's List **May 2023**

Rutgers- New Brunswick

- A qualification determined by a semester grade-point average of 3.500+ with 12+ credits per semester. Earned for four consecutive semesters.

Certificate of Special Congressional Recognition **Dec 2020**

Cedar Grove High School

- A recognition given for a group-based Javascript project called "AppDHD," which was submitted to the "Congressional App Challenge."