Denis Lalaj

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EDUCATION

UNIVERSITY OF BRITISH COLUMBIA
BASc Computer Engineering
2019 - ongoing | Vancouver, BC
Faculty of Applied Science
Department of Electrical and Computer Engineering

LINKS

Facebook:// **Denis Lalaj**
Github:// **dlalaj**
LinkedIn:// **Denis Lalaj**

COURSEWORK

PROGRAMMING
APSC 160: Intro to Programming
CPEN 221: Software Construction
CPEN 211: Intro to Microcomputers

MATHEMATICS
MATH 100: Differential Calculus
MATH 101: Integral Calculus
MATH 253: Multivariate Calculus
MATH 256: Differential Equations
MATH 152: Linear Algebra
MATH 220: Discrete Mathematics

PHYSICS
PHYS 157: Thermodynamics
PHYS 158 Electromagnetism
PHYS 170: Mechanics and Dynamics
PHYS 159: Physics Laboratory

WRITING
WRDS 150: Academic English
CPEN 281: Technical Communication

CURRENT COURSES
CPSC 221: Algorithms and Data Structures
CPEN 291: Design Studio: Machine Learning
CPSC 261: Basics of Computer Systems

SKILLS

PROGRAMMING
- Java (Intermediate)
- Verilog (Intermediate)
- C (Intermediate)
- C++ (Intermediate)
- Python (Novice)
- ARM Assembly (Novice)
- MATLAB (Novice)
- LaTeX (Novice)

PROJECTS

CPEN 211 | VERILOG | Simple RISC Machine
Oct 2020 – Nov 2020 | Group of 2
- Designed a reduced instruction set computer with a datapath and finite state machine controller.
- Implemented a limited sized RAM memory that supports I/O functionality for the RISC machine.
- Added support for ARM Assembly based instructions (arithmetic, memory-based, and branching): ADD, SUB, AND, MOV, LDR, STR, BEQ, BNE, BLT, BLE, BL, BX, and BLX.

CPEN 221 | JAVA | Graphs and Virtual Worlds
Oct 2020 – Nov 2020 | Group of 3
- Implemented the adjacency matrix representation of the graph data type.
- Implemented the Breadth First Search and Shortest Path algorithm.
- Implemented an AI class for the rabbit (animal type) to provide strategic actions based on analyzing the surrounding items.
- Used JUnit test to achieve branch and line coverage of more than 90%.

CPEN 221 | JAVA | Buffers, Concurrency, and Wikipedia
Nov 2020 – Dec 2020 | Group of 3
- Implemented thread-safe touch and update methods for a finite space finite time buffer that serves as a cache of items.
- Implemented thread-safe methods (zeitgeist and trending) that collect statistical information about Wikipedia requests.
- Implemented the timeout functionality for WikiMediatorServer that wraps and sends Wikipedia requests on behalf of a WikiMediator instance.
- Used JUnit test to achieve branch and line coverage of more than 90%.

EXTRACURRICULAR

UBC ENGI-YOU WELLNESS | Engineers Without Borders, Canada
Co-wellness coordinator | Jul 2020 – ongoing
- Facilitated stress breather activities for incoming engineering students at the Faculty of Applied Science, UBC.
- Co-hosted wellness workshops on the theme of stress and time management for first year students at UBC.

UBC FGSU | First Generation Student Union
Tech Volunteer | Sep 2020 – ongoing
- Co-planned the logistics of the GenOne Conference on the Brella platform.
- Co-hosted virtual help desk for tech support throughout the virtual conference.

AWARDS

• **DWISA (2019 - ongoing)**: Full ride scholarship worth over CAD 280'000 awarded by the University of British Columbia for academic excellence and leadership.
• **TREK Excellence (2019 - 2020)**: Merit-based scholarship awarded to the top 10 % students of the Faculty of Applied Science, UBC.
• **Dean's Honor List (2019 - ongoing)**: Awarded to students with an average of least A- taking a course-load of at 24 credits or more in the Faculty of Applied Science, UBC.
• **APhO Winner (2016 - 2017)**: Winner of the 2nd prize on the Albanian National Physics Olympiad.