Predrag Pešić

Software Engineering Student

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Technical Skills

Languages: C/C++, C#, Python, Java, Kotlin, PHP, Pascal, JavaScript, TypeScript, SQL, JPQL, MATLAB
Frameworks: Django, Flask, React, React Native, Angular, Vue.js
Embedded: Proteus (ARM Cortex M3, Microcontroller STM32F103R6), ALTERA Quartus (Cyclone III/V)
Other: Git, Docker, Azure, Hyper-V, UML, Android, MongoDB, Hadoop, Latex, HTML, CSS, Node.js

Education

School of Electrical Engineering, University of Belgrade Oct 2020 - Present
Software Engineering, Bachelor of Science

- Grade: 9.96/10.0
- GPA: 4.0/4.0
- Relevant courses taken: Programming, Object-oriented programming, Algorithms and data structures, Operating systems, Concurrent and distributed programming, Computer networks, Computer architecture, Microprocessor systems, Program compilers, Databases, Database software tools, Fundamentals of computer engineering, Principles of software engineering, Software design, Internet application programming, Web design, Information systems, Neural networks, Intelligent systems, Discrete mathematics and numeric analysis, Probability and statistics

Electrical Engineering High School "Nikola Tesla", Belgrade Sep 2016 - Jun 2020
Information Technology, High school diploma

- Grade: 5.0/5.0
- GPA: 4.0/4.0
- Major: Computer Science, Mathematics and Physics
- Graduation practical exam in web programming: 5.0/5.0
- Graduation practical exam in database management: 5.0/5.0
- Graduation theory exam in procedural, object-oriented and web programming, web design and DBMS: 5.0/5.0

Experience

Software Engineering Intern Nov 2023 – Present
Microsoft, Belgrade

- Office Media Group
- Enhancing video recordings based on the user interaction
- Improving share screen systems in video recordings
- Investigating picture analysis models
- Technologies: Python and OneCamera codebase

Active Information Technology Member Sep 2023 – Present
Google Developer Student Club, University of Belgrade

- Solution challenge
- Developing idea for solving one of seventeen UN global problems
- Integrating ML model for affirmative mental health support

Software Engineering Intern Nov 2022 – Mar 2023
Microsoft, Belgrade

- Azure Core Runtime
- Implemented full-stack feature for tracking and visualizing TFL in SFX
- Impact on reducing the time of ICMs for customers and on-call engineers
- Backend: C++ and C#
- Frontend: Angular and Typescript

Student Teaching Assistant Oct 2022 – Present
School of Electrical Engineering, University of Belgrade

- Lecturing, evaluating and grading students
- Organizing and monitoring laboratory work, practical and theoretical exams
- Selected in all the courses previously taken

Achievements

- Third place at Hackathon grand final (FON DIGITAL, NIS Petrol), 2023
- Coca Cola HBC Full stipendist, 2023 - Present
- Participation at Hackathon grand final (FON FONIS, Ernst & Young), 2023
- Gold medal at Elektrijada competition in Object-oriented programming, 2023
- Gold medal at Elektrijada competition in C programming, 2023
- Coordinator at the project "Student mentor", 2022 - Present
- Participation at Hackathon grand final (EESTEC BNE, Tenderly), 2022
- Silver medal at Elektrijada competition in Object-oriented programming, 2022
- Honorable mention at Elektrijada competition in C programming, 2022
- Student mentor to the six freshmen at School of Electrical Engineering, 2021 - Present
- Participation in National competition in Informatics (DMS), 2020 & 2019
- Bronze medal in High school championship in Mathematics (41st tour), 2019
- Honorable mention at National competition in Mathematics (DMS), 2019
- Participation at High School Case Competition grand final (FON HSCC, Zlatiborac), 2019
- Gold medal at Republican final in Mathematics (Archimedes), 2018
- Gold medal at National competition in Electrical Engineering Basics 2, 2018
- Silver medal at National competition in Electrical Engineering Basics 1, 2017
- Received scholarship for gifted students, 2018 - Present
- Awarded "Material resources for programming development", 2018
- Awarded "Dositeja's award for the most successful high school students", 2019 & 2018 & 2017

Projects

Operating system for RISC-V architecture | *Assembly, C/C++, Makefile*

Minimalistic kernel for RISC-V architecture with support for some basic kernel functions (i.e., time-sharing, multi-threading, semaphores, etc.). Scope of the project also includes implementation of memory allocation, thread management, semaphores, etc.

Modified Ludo game and magic square generator | *C*

Implementations of n-ary tree and graphs. Simulation of 2-player game given by specific rules (DFS & BFS).

B-star tree and hash-table implementation | *C++*

Program with complete implementation of B-star tree (Variation of B-plus tree), including operations of adding, deleting and searching on specific node, as well as visual representation of B-star tree structure. Program also includes full implementation of hash-table and dynamical techniques of hashing, implementation of quadriatic-hash function and implementation of dynamic scalable hashing. Tested with large .CSV base.

Falling pentagons game | *Java*

Java GUI based project that includes principles of object-oriented programming as well as thread management, synchronization, interrupting, etc. Program was written using Java AWT package.

Olympics data processing | *Java, C++, JNI*

Written using Java Swing, with strong focus on abundant use of Java collections, streams, buffered readers, regex, matchers, etc. Primary goal of the project was to use Java Native Interface (JNI) to link Java and Cpp programs, as well as to create .dll libraries.

Instagram for Libraries | *Python (Django), JavaScript, HTML/CSS, Ajax, MySQL, Erwin, UML*

Django full-stack application that follows whole process of developing an application - 7 phases including prototypes, UC scenarios, formal reviewing, database modeling, implementation and testing. MySQL server was used for database core.

Online store with order calculating | *Java, GlassFish, JDBC, JMS, REST API*

Program written in Apache NetBeans with whole data flow from client, through server (GlassFish 5.0), to the subsystem for database management, and all the way back. Project includes concepts of JDBC and Java Resource Pool, stateless and stateful services and Java Message Service (JMS) as communication protocol. MySQL Workbench was used for database modeling. Project includes using of Dijkstra's algorithm for solving the problems of the traveling salesman.

SNMP manager | *Java, GNS3*

Java GUI based program that represents set of SNMP usages, altogether with various BGP4 and MIB processing. Setup of environment and testing were done through Linux CLI and GNS3.

Work management system shop | *Python (Flask), Docker, Ethereum, Apache Spark, Redis, HTML/CSS*

Dockerized e-commerce app for selling products with support for Ethereum blockchain payments and calculating statistics with Apache Spark framework. Project was written in Python Flask, including concepts of JWT tokens and specific microservices such as Redis, Ganache CLI, MySQL and "home made" containers.