Aleksandra Novikova

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Education

Saint Petersburg State University **Sept 2018 – Aug 2022**

Bachelor's program in Computer Science and Software Engineering

GPA: 4.97/5.0

Related Coursework:

- C++, Kotlin, Python, Go, Haskell
- Algorithms
- Machine Learning, Deep Learning
- 3D Computer Vision, Image processing
- Systems, Databases, Computer Networks
- Software Engineering, High-load Systems Design

Experience

Google **July 2020 – Sept 2020**

STEP intern, «WearOS iOS Companion SDK» team

- Developed app for iOS - WearOS iOS Companion App for synchronizing smartwatch and phone
- Added functionality in Swift using Google SDK
- Communicated directly with project managers and engineers on implementation decisions
- Technologies used: iOS, Swift 5, UIKit, Autolayout, Git, Unit testing, memory management

JetBrains Research **Feb 2021 – May 2021**

Intern, «KMath» team

- Improved KMath library - the Kotlin-based open source mathematics library
- Implemented tensor linear algebra algorithms such as broadcast, SVD and other useful algorithms for data scientists
- Technologies used: Kotlin, Machine Learning, Linear Algebra

Projects

Sketch-based modeling **Sept 2021 – May 2022**

Bachelor's thesis

- Sketch-based character pose estimation using artificial neural networks
- Generated a dataset with over 500k sketches from 3D models using Blender

BOA* **Feb 2021 - June 2021**

- Researched an article about the heuristic algorithm «BOA*». Implemented and improved the algorithm in **C++**
- Tested on real maps of New York City, Colorado State and other maps

URL Shortener **Mar 2021 - May 2021**

- Team project URL Shortener in Go written as part of the «High-load Systems Design» course at the university
- Technologies used: Go, Docker, PostgreSQL, Prometheus

UI-Virtualization **Sept 2020 - Dec 2020**

- Created a control with virtualization, which can efficiently work with very large or unlimited amounts of data.
- Technologies used: C#, WPF, Database, Async Programming

Technical Skills

- C++, Python, Go, Swift. Have experience in programming in C#, Kotlin, Haskell, Java, JavaScript
- NumPy, Pandas, PyTorch, TensorFlow, OpenCV, OpenGL
- Git, GitHub, Linux, SQL & NoSQL

Achievements

- **Awarded Google Grant to attend Grace Hopper conference** **Sept 2020**
- **JetBrains Student Scholarship** **July 2018 – Present**
  - Recieved for enrolling as an awardee of mathematics and programming olympiads
  - The scholarship was extended to the second and third year of study on the grounds of perfect academic performance

Extracurriculars

- **Math Club Junior Teacher** **Sept 2018 – Present**
  Competitive Math Club for 5-9th grade children in «Presidential Physics and Mathematics Lyceum №239»
- **Summer Informatics School Junior Teacher** **July 2019**
  Taught algorithms to gifted school students and organized their leisure and creative activities
- **Summer Informatics School Participant** **July 2016, Jan 2017, July 2017, Jan 2018**
  Studied algorithms and was engaged in competitive programming