Ivan Bilous

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Education

National Technical University "Kharkiv Polytechnic Institute" *Kharkiv, Ukraine*
BS in Computer Science, expected in June 2021 *(September 2017 - Present)*

Research Experience

Undergraduate Research Assistant *(September 2019 - Present)*
National Technical University "Kharkiv Polytechnic Institute", Department of Software Engineering and Management Information Technologies

- Cooperate with Associate Professor Dmytro Orlovskyi and examine systems of adaptive interfaces for analysts who work with a variety of relational databases as a subject of my graduation project
- Study adaptive parametric interfaces for analytical database queries
- Worked on a team of students led by Dmytro Orlovskyi investigating problems of accounting, management and monitoring of electrical equipment with the help of information systems
- Co-authored publications and attended conferences

Publications

- Dmytro Orlovskyi, Andriy Kopp, **Ivan Bilous** "Архітектура інформаційної технології підтримки моніторингу та аналізу стану електрообладнання." [Architecture of Information Technology for Monitoring Electrical Equipment Condition] *Information Technologies: Science, Engineering, Technology, Education, Health: Abstracts XXVIII International Scientific-Practical Conference MicroCAD-2020* (2020): 44. (UA) [1]
- Dmytro Orlovskyi, Andriy Kopp, **Ivan Bilous** "Development of Adaptive Parametric Interface for Analytical Queries: Electrical Equipment Management System Case Study." *XIII Annual Scientific Conference «Information Technology and Automation – 2020» Conference proceeding* (2020): 232-235. (ENG) [2]

Conferences Attended

- XXVIII International Scientific-Practical Conference "Information Technologies: Science, Engineering, Technology, Education, Health" (MicroCAD-2020) *(Kharkiv, 2020)*
- XII Annual Scientific Conference «Information Technology and Automation – 2020» *(Odessa, 2020)*

Projects

ScoreCleaner [3]
Side project *(July 2020 - Present)*

- Designed and implemented an algorithm that allows users to see how product's page on a review aggregator website looks like without "review bombing"
- Developed and implemented an efficient algorithm that extracts, processes and analyses reviews from one of the online media review aggregators
- Implemented a proxy rotation mechanism to avoid blocking of IP address while scraping HTML pages
- Created a foundation for future application improvement with the help of natural language processing for more precise analysis of reviews

Genetic Algorithm Solves a Maze [4] *(September 2020 - October 2020)*
Side project

- Studied genetic algorithms and applied this knowledge to solve a search problem
- Developed a tool for building mazes and implemented a genetic algorithm for solving these mazes with visualization of the process using Unity engine

Information system for accounting, management and monitoring electrical equipment
Coursework (1st and 2nd semester of the 3rd year) *(September 2019 - June 2020)*

- Devised an information system for one of the Ukrainian energy holding companies working on a team of 6 students
- Played the main role in defining an architecture for a client and a server side of the application

- Carried out domain analysis and provided improvements for an existing data model
- Developed a tool for performing analytical database queries through parametric user interface
- Defined user interface design principles for the whole application

Awesome Cowboy Revenge [5] *(January 2019 - May 2020)*

Side project

- Designed and developed an Android game using Unity engine
- Collaborated with my friend to create an original soundtrack for the game
- Published the game on Google Play
- Wrote an article about the game for DTF.ru, received feedback and attracted players

Optimal Portfolio of Securities *(January 2020 - February 2020)*

University project

- Worked closely with Professor Viktor Huzhva studying Modern Portfolio Theory examining a problem of selecting an optimal portfolio of securities
- Implemented Frank-Wolfe algorithm and developed an application that solves nonlinear programming problem and finds an optimal portfolio of securities

Student Baze *(March 2019 - June 2019)*

Coursework (2nd semester of the 2nd year)

- Built a web application for managing students' data using Django framework
- Conducted domain analysis and applied the results to design and create database
- Developed a tool for forming curriculums and automated the process of defining eligible for a stipend students basing on their grades

Wayley [6] *(October 2017 - January 2019)*

Co-founder of the startup (Mobile application)

- Collaborated with team members to create a pocket assistant with walking routes for Kharkiv residents and tourists in this city
- Led the design vision, was responsible for user experience and branding
- Designed all application's user interface
- Took 2nd place at Kharkiv Startup Fair (December 2017)

Equation Solver *(October 2018 - December 2018)*

Coursework (1st semester of the 2nd year)

- Developed a desktop application aimed at finding roots of equation with the help of secant method using JavaFX software platform
- Implemented the visualization of the roots finding process and generation of HTML report documents

Work Experience

Freelance Graphic Designer *(May 2017 - September 2017)*

- Created the design of various polygraphic and web materials
- Worked closely and productively with clients from different fields to provide creative design solutions
- Effectively managed time in order to meet deadlines

Technical Skills

Languages: Python, Java, C++, C#, JavaScript, SQL, HTML, CSS
Mathematical software: MATLAB, Scilab
Game engines: Unity

1 Publication can be found at https://doi.org/10.5281/zenodo.4172905
2 Publication can be found at https://doi.org/10.5281/zenodo.4172932
3 ScoreCleaner. Details and screenshots can be found at https://1vanbilous.github.io/scorecleaner
4 Genetic Algorithm Solves a Maze. Details, video and screenshots can be found at https://1vanbilous.github.io/geneticalgorithm
5 Awesome Cowboy Revenge https://play.google.com/store/apps/details?id=com.KeptSimpleGames.AwesomeCowboyRevenge
6 Wayley. Details and screenshots can be found at https://1vanbilous.github.io/wayley