Nikita Sushko

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Research Interests

Develop advanced innovations encompassing the future technologies of the next generation such as artificial intelligence, artificial neural networks, machine learning, brain-computer interface, human-robot interaction, spacecraft design, interactive systems engineering.

Experience

- **Lead Software Engineer** at **Arbor Prime**, arprime.ru
  Moscow, Russia; 05/2015 – present
  Oversaw development, technical operations, business intelligence, quality assurance, and IT. Develop software solutions of business process automation for B2B organizations. Implement back-end web-based database systems and windows applications (CRM, ERP, ECM architectures). Provide effective solutions for data access and management. Manage a team of 5 engineers.
  Implementation of software and automating workflow has achieved:
  - Increased process effectiveness and productivity in 3x times
  - Reduce business costs at least 10% with labor saving
  - Produce more jobs faster, increase capacity and working speed
  - Remove human errors and manual activity by work standardization
  - Designing of cross-cutting analytics, which leads to an increase in revenue

  Technology Base: C#, Python, PHP, JavaScript

- **Software Engineer** at **System Monitoring Institute**
  Moscow, Russia; 06/2013 – 12/2013
  Worked on multiple, simultaneous projects. Designed business systems for clients from diverse industries, including finance, retail, restaurant, and human service. Participated in product design, development of business model, business plan and customer presentations. Devised enhancements and updates for existing application suites. Drafted technical manuals and perform unit testing.
  Technology Base: JavaScript, PHP, PostgreSQL, XML, UML

- **Web Developer** at **Convekta Ltd**, chessok.com
  Moscow, Russia; 01/2012 – 05/2012
  Created chess lessons with team of 10 people. Was responsible for the graphics design and visualization algorithms of the paths on the chessboard. Performed UI/UX tests, collaborated with software developers for building design and web front-end. Reviewed new features and functionality of chess application. Chess lessons led to results:
  - More than 1,000 purchases first month
  - 300+ active users on learning courses each day

  Technology Base: html, css, JavaScript, jQuery

Education

Lomonosov Moscow State University, *Moscow, Russia; 2010 – 2015*
Faculty of Computational Mathematics and Cybernetics.
Department of Algorithmic Languages.
MSc Computer Science.
Russia's top ranked university with a decent mathematical basis.

Skills

Advanced: C++, C#, PHP, JavaScript, Python, SQL
Basics: C, Objective-C, Pascal, Refal, Haskell, Lisp, Prolog, Assembly
Technologies: Big data, Machine Learning, Parallel Computing (MPI, OpenMP), MVC, Frameworks, Node.js, WebSockets, OpenGL, Networking, VPS/VDS

Projects

- **The distributed denial-of-service (DDoS) attack visualization system, 2015**
  System is to trap false packets on the computer networks using TCP/IP protocol. The main purpose is to identify by visualizing schemes and TCP state diagram where are the vulnerabilities on the under attack server and immediately alert. State diagram visualizes every connection on server, showing how packets and flags change from one state to other. The system has been successfully tested at 100,000 simultaneous connections.
  Technology Base: C, Python, JavaScript, WebSockets
  Url: github.com/fridary/davs

- **Pedestrian detector, 2013**
  Program detects pedestrians on image. It uses a binary classification. All data input is divided into two classes: the images that have pedestrians and images that it is not. The problem is to train a classifier so that a new input image will be able to determine whether it contains a pedestrian. Trained classifier has 99.9% accuracy.
  Simple scheme of the classifier:
  - Feature extraction. Each image is described by a set of features called descriptor. Program will use the descriptor based on the histogram of oriented gradients, or HOG.
  - Training of the classifier. Classifier is a kind of routine that can, learning on transmitted data, distinguish different classes of images of each other. In this case, the input of the classifier receives its descriptors images and highlight pedestrian on image.

  Technology Base: C++, Machine Learning
  Url: github.com/fridary/pedestrian-detector

- **Ultimate Graph, 2010**
  Visualization and educational platform for working with graphs and algorithms in graph theory: breadth-first search, depth-first search, Dijkstra's algorithm and bridge-finding algorithm. User can create graphs on working space and visualize them step-by-step in real-time. The visualization explains how algorithms work.
  Technology Base: C#, WPF
  Url: github.com/fridary/ultimate-graph

Awards

"Lomonosov" Olympiad, Moscow, 2010
The winner of the mathematics contest. More than 10,000 entrants take part each year.

"Step into the Future" Olympiad, Moscow, 2010
The winner of the competition on the complex of subjects: mathematics, informatics and physics.

References

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Github: github.com/fridary

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