ALEXANDER TSEMA

Software Engineer

New York, NY 10024
P. 917 945 1755
at.webdes@gmail.com
www.alexandertsema.com
www.github.com/alexandertsema
www.linkedin.com/in/alexandertsema/en

SUMMARY

Self-motivated creative professional Software Engineer seeking a full-time position or OPT with challenging projects on the edge of technology. Fast learner, enjoys finding simple solutions to complicated problems, with strong analytical skills, well-organized and a good team player with ability to form excellent working relationships.

TECHNICAL SKILLS

	Advanced	Experience with	Minor experience with
Programming Languages	C#; SQL; Python; JavaScript	Java; HTML; CSS	C; C++
Frameworks, Platforms and Libraries	ASP.NET Core; ASP.NET MVC; ASP.NET Web API; WCF; SignalR; Entity Framework; AngularJS	Angular, TensorFlow; Android SDK; NumPy; WPF; Windows Forms	OpenCV; Keras; Theano; Xamarin
Databases	SQL Server; MongoDB	MySQL	Oracle; PostgreSQL
Tools	Git; TFS; Resharper Ultimate; IIS	Umbraco CMS	
Technologies	REST; SOAP; Sockets	Multithreading; OAuth 2.0; Protocol Buffers	GIS
Architectural Principles	SOLID; SOA; MSA		
Methodologies	Unit Tests; TDD; RUP; Scrum		
Cloud Platforms	Azure		
OS	Windows; Unix		

WORK EXPERIENCE

New York City Department of Health and Mental Hygiene, HHP — **New York, NY, USA**
Software Engineer Intern — August 2016 – present

Overview: Document flow automation system development; Full stack development of web applications and web services; Databases administration.

Responsibilities: Analyzing project data to determine specifications and requirements; Development use cases of the products; Designing the architecture of the applications; Programming the business logic; Programming front-end scripts; Testing software performance; Development testing routines or procedures; Modifying software programs to improve performance; Providing technical support for software maintenance or use; Documentation design and development procedures; Administration of IIS (applications' security configuration, applications' deployment); SQL Server backups, restores; MongoDB backups, restores, replica set configuration, version upgrading.

Contribution: Introduced ASP.NET WEB API 2, OAuth 2.0, AngularJS, patterns Repository and Unit of Work, Test Driven Development, UML. Migration from .Net 4 to .NET 4.6 and .Net Core.

Achievements: Successful introduction of bleeding edge technologies and approaches of software development. Successful completion of 2 projects: the application for reports generation; dashboard of servers' performance. Migration environment from MongoDB version 2.6 to MongoDB version 3.4. Upgrading obsolete WCF services for document flow automation to Mongo Driver version 2.4 and .Net 4.6.

Currently working on the development of the brand-new flexible document flow automation system with the use of cutting edge software engineering approaches.

MAYKOR, The Automation Department — **St Petersburg, Russia**
Software Developer — 2014 – 2015

Overview: Business processes automation of large enterprises and factories such as Toyota, Aquaphor and governmental organizations; Full stack Development of web applications and web services.

Responsibilities: Development use cases of the products; Designing the architecture of the applications; Designing the architecture of the databases; Programming the business logic; Programming front-end scripts; Testing software performance; Development testing routines or procedures; Modifying software programs to improve performance;

Providing technical support for software maintenance or use; Documentation design and development procedures; Administration of IIS and SQL Server Databases.
Contribution: Introduced ASP.NET MVC, Entity Framework, patterns Repository and Unit of Work, Test Driven Development, Agile and UML. Migration to .NET 4.5.
Achievements: Successful introduction of bleeding edge technologies and approaches of software development. Successful completion of 4 projects: the application for automation water filters factory; the application for automation vehicle factory; the update service; the school automation system.

AT Web Design Studio, self-employed — **Worldwide**
Software Developer — 2010 – 2016
Overview: Business processes automation; Full stack development of web applications, web services, mobile applications and desktop applications.
Achievements: Successful completion over 20 projects for clients all over the globe.

EDUCATION

The City College of New York — **New York, NY, USA**
Master's Degree, Computer Science, GPA 3.6 — May 2017 expected
Projects: Stock forecasting using LSTM; Travelling salesman problem using Held Karp and Simulated Annealing algorithms; Graph problems using Dijkstra's and Prim's algorithms; Data clustering using K-means algorithm; Video transmission over UDP using AIMD algorithm; Compiler development.
Graduation Project Work: "Scene Classification for Indoor Localization System"
Overview: This project is a part of fully functioning vision based assistive indoor localization system for visually impaired people. The convolutional neural network was developed to classify high-resolution omnidirectional images to reduce the time complexity of the sample search algorithm. Firstly, the dataset was generated and normalized. Secondly, the CNN's architecture was developed and global parameters were optimized. Thirdly, the trained model was validated and tested on distinct datasets to ensure generalization ability correctness. The classification accuracy for top 1 candidate class on the testing dataset is up to 89% on average, for top 2 candidate classes is 100%. All work was done using Tensorflow 1.0 with original Python API. All the insides of the CNN were visualized in the Tensorboard. The results of the research will be published in a book "Assistive Computer Vision" by Fall 2017.

ITMO University — **St Petersburg, Russia**
Master's Degree, Software Engineering — 2014 – 2016
Graduation Thesis Work: "The Method of Face Recognition of Race and Ethnicity using MLP"
Overview: The main purpose of this research was to develop a method for the determination of the national affiliation of a person by the image of his face. Firstly, the metrics were developed and formalized, the database was constructed and all data was normalized and separated into training, validation and test sets. Secondly, was made an analysis of fully connected neural networks and their training methods. Third, determined the most appropriate configuration of the neural network, experimental and empirically selected the most appropriate network settings. Finally, conducted testing of the developed method. Among technologies used were Python with NumPy, Keras with Theano backend. All experiments were made using Jupyter Notebook. All data was visualized with Matplotlib and Seaborn.
Bachelor's Degree, Computer Science and Computer Engineering — 2010 – 2014
Graduation Thesis Work: "Pattern Recognition in Video Streams"
Overview: The main purpose of this research was to develop a method for the hand gestures recognition using web camera. The method was developed with OpenCV using SIFT and SURF descriptors. Studied and analyzed methods of video preprocessing and scene segmentation.

ACTIVITIES

ITMO University — **St Petersburg, Russia**
The English to Russian Language Translator — 2015
The translation of the book "Learning Data Mining with Python" by Robert Layton
The English to Russian Language Translator — 2012
The translation of the book "Korn Shell Programming" by Dennis O'Brien

INTERESTS

Computer Vision, Machine Learning, Deep Learning, AI, Signal Processing, Big Data, Algorithms, Hardware.