Tanvir Sajed

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GitHub : https://github.com/tsajed

EDUCATION

- University of Alberta, Edmonton, AB
  September 2016 - Present
  Masters of Science in Computer Science (Machine Learning & Bioinformatics)

- University of Alberta, Edmonton, AB
  September 2010 - June 2014
  *Bachelor of Science in Computer Science (Specialization); **GPA - 3.0***

SKILLS

- Proficient in Ruby, C, C++, Java, SQL, Linux/UNIX
- Experienced in R, MATLAB, Javascript, CSS, HTML, Perl, Python, C#
- Experienced with frameworks like Ruby on Rails, Django, REST APIs, Twitter Bootstrap
- Experienced with team software development methods like Agile and Scrum

WORK EXPERIENCE

- Software Engineer in Research & Development
  The Metabolomics Innovation Center, University of Alberta, Edmonton, AB
  May 2014 - August 2016
  - Developed, maintained and updated multiple web application software, servers and databases using Agile software engineering with a team of software engineers and developers. (http://wishartlab.com).
  - Developed large-scale web applications on distributed systems to handle more than 300,000 users per month on Drugbank and HMDB (http://drugbank.ca).
  - Developed machine learning algorithms to predict chemical compound spectra and compound structure implementing Probabilistic Graphical Models like Simulated Annealing and Bayesian Networks.
  - Published 4 research papers (academic journals) on bioinformatics application servers and databases (ECMDB, T3DB etc.) using Ruby on Rails, Javascript frameworks (JQuery), MySQL, Python Django etc.
  - Developed internal software libraries and RESTful APIs to facilitate bioinformatics data exchange.
  - Worked as System Admin on multiple cloud servers hosted on Google Compute Engine, Digital Ocean and AWS.
  - Worked as a team leader for the last 6 months on an application server project (ECMDB published).

- CTO and Co-Founder
  Apollo Technologies Limited, Edmonton , AB
  December 2013 - Present
  - Co-founded a startup company that does research and development in music and lighting technologies. (http://apollotechnologies.ca).
  - Developed embedded software on Arduino connected with LEDs to the back of a guitar. The Arduino changes light colors to inputs from accelerometer and other sensors.
  - Developed Java Android app to facilitate real time data exchange between Arduino and external laptops or lighting device.
  - Developed a light interaction software on MAC and Windows using JUCE C++ Library, soon to be published.

- Online Research Assistant
  Baylor University, Baylor, TX
  January 2013 - September 2015
  - Worked online and published a journal paper on Bioinformatics research project - Protein family structure prediction implementing Supervised Machine Algorithm (SVM) using Perl and R.
  - Implemented algorithms like Support Vector Machines, Naive Bayes and dimensionality reduction algorithms like Principal Component Analysis.

- Software Engineer
  ScopeAR Technologies, Edmonton, AB
  July 2014 - November 2014
    - Developed industrial and aerospace augmented reality apps that simulate training environments for workers.
    - Worked with Unity 3D, C#, NGUI, Vuforia. Tasks included creating animation, GUI elements and C# scripts for interacting with augmented world.

- Research Assistant
  University of Alberta, Edmonton, AB
  May 2012 - August 2012
    - Worked on a research project - Reassortment prediction in Influenza A Virus using 7630 virus strains.
    - Implemented MySQL and JDBC for database, Java for object-oriented programming and design.
    - Performed data analysis and cluster identification on genomics of Influenza A Virus.

IMPORTANT PROJECTS
- Cmput 301 Software Engineering Team Project – A photo organization mobile application with Agile
    - Learned and implemented Java, Android SDK, Object-oriented programming concepts and best software engineering techniques
    - Won the best team award of all the projects submitted
    - Video : http://www.youtube.com/watch?v=jf1RNti4dk0
    - GitHub Link : https://github.com/cs301w03/cs301w03

- Cmput 302 3D Human Machine Interface Team Project – A Kinect Hand Gesture Recognition App.
    - Learned and implemented Blender 3D for graphics, Python for networking and C# with MS Kinect SDK.
    - Video : http://www.youtube.com/watch?v=jQCXTyTQCdo

- Cmput 250 Computer Games Team Project – A PC Video Game using Bioware's Neverwinter Night's Game Engine - Aurora Toolset.
    - Nominated for the best game, best technical achievement and best story.
    - Video : http://www.youtube.com/watch?v=4GO3JfR9e5U

- Cmput 401 Software Engineering Team Project - *Antic* - A Chemotherapy App built with Agile
    - Developed a Chemotherapy App using PhoneGap API, JQuery mobile to port as an Android app and also an Iphone App for a client in pharmacy.
    - Developed the backend of website with PHP and Symphony
    - Website URL : http://www.oralchemotherapy.ca/

HONORS AND AWARDS
- International Scholastic Distinction Scholarship, Dean's Citation in Science Scholarship, Registrar's International Student Scholarship, Dean's Honors Roll *(2010 - 2012)* at University of Alberta
- National Mathematical Olympiad Champion, Mathematical Olympiad Association, Bangladesh, 2008.
- Interviewed by MetaboNews for October 2015. Contributed an article about ECMDB to MetaboNews for February 2016 isssue (http://www.metabonews.ca/Oct2015/MetaboNews_Oct2015.htm#MetaboInterviews).
- The Paper (PredSTP: a highly accurate SVM..). was an Editor's Pick by BMC Bioinformatics for 2015.

SELECTED PUBLICATIONS
- Islam, S.A., Sajed, T., Kearney, C.M. and Baker, E.J., 2015. PredSTP: a highly accurate SVM based model to predict sequential cystine stabilized peptides. *BMC bioinformatics*, *16*(1), p.1.
- Sajed, T. et. al, 2015. ECMDB 2.0: A richer resource for understanding the biochemistry of E. coli. *Nucleic acids research*, p.gkv1060.

INTERESTS
- Regularly take online courses in computer science and study research papers.
- Solve coding problems as a hobby and participate in hackathons.
- Work on multiple side-projects including the start-up that I helped create.