Benny Fang
E-mail: bfang.01234@gmail.com
GitHub Link
LinkedIn Link

Benny Fang

Education

2011-2016

Bachelor of Applied Science and Engineering - University of Toronto:
Graduated: Major in Computer Engineering, Minor in Engineering Business
University of Toronto St. George Campus, Toronto, ON

Technical Skills

Software Languages:

- Object-Oriented (C, C++, Java, Python) - **5 years**
- SQL Database (MySQL, MicrosoftSQL, PostgreSQL, Java ODBC) - **2 years**
- JavaScript (JQuery, JSON, AngularJS) - **1 year**
- ASP.NET (VB, C#) - **1 year**
- Swift (iOS App Dev) - **beginner**
- Web Development (PHP, html, XML, CSS, Markdown Language) - **1 year**

Platforms:
Microsoft Visual Studio, Microsoft Dynamics CRM, Eclipse, XCode
SCM Tools:
Microsoft Visual Studio TFS, Git, Subversion (linux)
Operating Systems:
Microsoft Windows, MacOS, Linux/UNIX
Others:
AGILE/SCRUM development cycles, Network programming (TCP/IP protocol), Multi-threading and optimization, Data structures and algorithms, VR/AR, Technical documentation

Work Experience

2014-2015

System Developer - City of Brampton, Ontario:

- Enrolled in Professional Experience Year (PEY) program in the University of Toronto for one year, working as a System Developer in the Solution Delivery team of IT services in the City of Brampton
- Customized Visual Basic macros for Excel to automate data retrieval from server storage and smart fill tables
- Queried data for fire incidents and categorized them into types and years, which was then translated into a heat map presentation on the city website
- Resolved over 50 bugs in the Application Inventory Depository site written in VB.Net to launch it into production
- Designed the Transit Incident Tracking System (***see page 2, second project***) to address the city's need for an online, easy-to-use tracking system
- Researched a solution to outline the system dependencies in the City of Brampton and showcased the results via demos

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Programming and Engineering Projects

2015-2016

Team Lead of a Real-time Piano Simulator Project - University of Toronto:

- Handled a project in a team of 4 to recreate authentic piano sound at real time by simulating complex physical piano mechanism rather than simple piano key sampling
- Divided the team into 2 groups: the algorithm team responsible for calculations and research, and the programmer team responsible for software-hardware implementations
- Visualized the piano sound algorithm as a function of time and initial key-strike velocity to simulate the action of the hammer striking the string inside the piano
- Initially ran algorithm in matlab, converting calculated sample sound vectors into a playable sound wave
- Migrated to C++ due to its superior runtime and available means of optimization such as multi-threading and blocking
- Implemented hardware integration with a electric piano via USB ports and programmed generated sound onto each piano key
- Demonstrated design at the annual University of Toronto design fair, allowing users to play with the piano freely while generating sound at real-time as keys were struck

2014-2015

Developer of the Transit Incident Tracking Solution - City of Brampton:

- Approached by the City of Brampton's Transit Department representative to create a system tracking transit incident records within the City of Brampton
- Designed the system using the Microsoft Dynamics CRM 2011 platform
- Drafted Excel document to outline schematic and relationship information
- Implemented entities and forms to store information entered by the users
- Customized the entities with JavaScript and JQuery to integrate smart forms to auto-fill information, hide and show fields to users with different roles and grey out unnecessary fields based on drop-down options
- Built automated email sender using Microsoft CRM workflows and dialogs
- Held weekly meetings with the client and the project manager for feedbacks
- Presented design to the client and power-users and delivered the system into production

2014

Member of a VR Design Project Team - University of Toronto:

- Engaged in an VR application development project in C# on the Unity platform
- Participated in a group of 3 and was assigned the task to brainstorm project design and elements to implement due to my prior music background
- Created a virtual music player that respond to hand gestures to the sensor camera
- Placed audio player on a virtual 3D plane and scaled music volume to the user's distance from the player (the sound was strong if user was close and weak if user was far)
- Supported multiple music players and placed audio control buttons to play and stop the music, as well as adjusting the volumes of each player through hand gestures only
- Allowed project to be passed on to future VR developers with drafted technical documentation and packaged libraries

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Other Individual Project

2017

Creator of My Personal Website:

- Drafted an individual website using GitHub platform powered by Jekyll
- Involved HTML elements that form the website layout as well as CSS for styling
- Utilized Jekyll's layout functionality to set up layout html and use content block for other index html elements
- Imported CV from pdf to website and added graphic elements such as interactive buttons and images

2009

Developer of an Text-based Game:

- Designed a text-based game in C++ with roleplaying elements
- Drafted the game based on the famous Japanese animation, Dragon Ball Z
- Incorporated ‘fun’ elements in the game, such as secret cheats, routes and items, as well as complex elements such as a battle system with random number generator
- Implemented flowchart to represent flow of the storyboard and game progression
- Logged progress with a programmer’s journal
- Subjected the game to peer marking and received positive feedback

Hobbies and Interests

- Music playing (Piano - 13 years, Alto Saxophone - 4 years at school band)
- Japanese culture and language
- Culinary art
- Tech gadgets and PC gaming