BANG CHI DUONG

https://bangchi.tk

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SKILLS

- **Languages:** Python, R, C++, C#, Java, Javascript, SQL, HTML5, CSS3, Perl
- **Frameworks:** Webpack, Babel, Typescript, React, Bootstrap, NodeJS, Express, ASP.NET Core, ESLint, Flask, REST, GraphQL, Docker, Confluence, JIRA, Mocha, Jest, PostgreSQL, MongoDB, SQL Server, Azure, TensorFlow, D3.js
- **Machine Learning:** Generalised Linear Model, Dimension Reduction Analysis, Deep Learning, Time Series Analysis

PUBLICATION

- **SCA 2019** — Los Angeles, USA
  Presentation — *July 26-28, 2019*
  - **Paper:** Daniel Holden, Bang Chi Duong, Sayantan Datta, and Derek Nowrouzezahrai. 2019. **Subspace neural physics: fast data-driven interactive simulation**. In Proceedings of the 18th annual ACM SIGGRAPH/Eurographics Symposium on Computer Animation (SCA '19), Stephen N. Spencer (Ed.). ACM, New York, NY, USA, Article 6, 12 pages. **DOI: https://doi.org/10.1145/3309486.3340245**

EXPERIENCE

- **Technical Safety BC** — Vancouver, Canada
  Data Scientist — *May 2019 – Aug 2019*
  - **API Backend Microservice - Flask/Docker:** Built a REST API backend microservice for the data science team to efficiently share data with other teams/departments, and set up Flask unit tests
  - **Web Scraping - Python:** Built a web scraping tool to gather available public data on building permits
  - **PDF Information Extraction - Python:** Built a simple tool to extract information into other formats (CSV/JSON) from specific PDF files
  - **Financial Forecast - Python:** Built a pipeline and applied time series models - classical (S)ARIMA(X) and LSTM neural network on financial data

- **Ubisoft - La Forge** — Montreal, Canada
  AI Programmer — *Sep 2018 – Dec 2018*
  - **Data Acquisition - Maya nCloth:** Generated/Extracted a pool of interactive cloth and soft body data
  - **Deep Learning - Python:** Extracted a compact subspace representation of (256/128/64) bases from ~10,000 dimensions using PCA, and trained neural networks entirely in the subspace to predict future motion trajectory
  - **Interactive Runtime Application - C++:** Integrated the learned models into a C++ runtime application
  - **Result:** Achieved a fast data-driven interactive subspace simulation, with performance gains from 300 to 5,000 times compared to the standard physics simulation in Maya

PROJECTS

- **Resource Utilization System - .NET/React/SQL-Server:** Building a full-stack web application in a team of seven; I am contributing mainly to the back-end development. This is an on-going project.
- **2D Game Project - C++/OpenGL:** Built a 2D game called **Capture the Castle** in a team of six using ECS pattern; my main contribution focused on the AI and particle systems; an executable directory can be found at **https://bangchi.tk/#projects**
- **Teaching Assistant:** Assisted university students in Software Engineering courses (CPSC 310 and CPEN 321)
- **Movie Review Web App - MongoDB/Express/React/NodeJS:** Built a full-stack web application to find and review movies; **https://cs490-project-movie.herokuapp.com/**
- **Car Detection In Image - Python:** Built a car detector with SVM model on features extracted from HOG method
- **Lossy Image Compression - C++:** Built an image compressor using space partitioning trees, specifically 2-D trees

EDUCATION

- **University of British Columbia** — Vancouver, Canada
  Bachelor of Computer Science (BCS); cGPA: 84.7/100.0 — *Sep 2017 – Apr 2020*

- **University of Guelph** — Guelph, Canada
  Master of Bioinformatics; cGPA: 91.0/100.0 — *Sep 2016 – Aug 2017*