KEVIN LU

GET IN TOUCH

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SKILLS

- Frontend:
  - HTML/JS/CSS
  - React/JSS
  - Next
  - MUI
- Data Science:
  - Jupyter
  - SQL
  - Numpy
  - Pandas
  - SKLearn
  - Keras
  - Tensorflow
  - Pytorch
  - HuggingFace
- Backend:
  - PHP
  - Flask
  - PostgreSQL
  - MongoDB
  - Heroku
- Other languages:
  - C++
  - Python
  - Bash
  - Excel
  - Latex
  - Mathematica

PAPERS

Retrieve, Caption, Generate: Visual Grounding for Enhancing Commonsense in Text Generation Models

Steven Y. Feng, Kevin Lu, Zhuofu Tao, Malihe Alikhani, Teruko Mitamura, Eduard Hovy, Varun Gangal
AAAI 2021: Association for the Advancement of Artificial Intelligence [peer-reviewed].

Personifications are Cunning: Exploring Approaches For Personification Identification

Kevin Lu, Steven Y. Feng, Varun Gangal, Harsh Jhamtani, Eduard Hovy
TADA 2021: Conference on New Directions in Analyzing Text as Data [peer-reviewed].

WORK HISTORY

Web Developer and Media Assistant
Chinese Christian Ministry Canada, 2019-2020 Summers

- Developed Wordpress website using HTML/JS/CSS/PHP (https://communitycare.ccmcanada.org/)
  - Maintained website throughout school year
- Created stop-motion movie as cover image to advertise their first aid kit

Tutor
Math4Me, Feb 2018 - Jun 2018

- Tutored struggling students for Math, Sciences and English
- Tutored 4 students at a time for 4 hours a week

Software Engineer Intern
Unlimited App, Feb 2018 - Jun 2018

- Startup for a freelancing platform for artists in Indonesia, as current methods are less accessible
- Helped develop a Next-based web app
- Worked with Next, React, AWS, Aurora API, Flask

PUBLICATIONS

Technical Reviewer for "Mastering spaCy', 2021

- Reviewed for Packt's book introducing the NLP Python package spaCy
- Verified technical details and tested code

Math Video: Submission for the Summer of Mathematical Exposition Challange, 2021

- Animated a video on the picture hanging puzzle, a puzzle from algebraic topology that can be explained to schoolchildren
- Got an honorable mention from Grant Sanderson
- Used Manim, a Python framework for mathematical animations
- Can be found at https://youtu.be/KHBCJCuKWyc

EDUCATION

University of Waterloo

Bachelors of Computer Sciences (Co-op), 2021-present

- 100% average in main courses

Sir Winston Churchill Secondary

International Baccalaureate Diploma Program (40/45), 2019-2021

AWARDS

- Faculty of Mathematics Entrance Scholarship $10,000 (2021)
- President's Scholarship of Distinction $2,000 (2021)
- BC Achievement scholarship: $1250 (2021)
- R.A. Pyke Scholarship for Mathematic recipient: $500 (2021)
- LGen Quinn Award Runner Up for Musical Excellence: $125 (2021)

ACHIVEMENTS

- Qualifier of Canadian Math Olympiad (2020) (top ~50 in Canada)
- 3 time qualifier of American Invitational Math Examination (top 5% of test-takers) (2019-2021)
- 3 time top in school for Canadian Computing Competition (2019-2021)
- USA Computing Olympiad Gold Qualifier (2020)

INTERESTS

- Jazzing on trumpet
- Playing for Animusic Ensembles
- Badminton
- Theoretical physics

CODING PROJECTS

PyATE Python package for ATE, 2020-present

- Implemented five automated term extraction (ATE) algorithms based on research through eight papers using spaCy POS tagging
- Engaged in significant independent research from sources such as
- Published implementations as a Python package on pip, attaining 25,000 downloads
- Also trained a spaCy model to identify terms to 95% accuracy in the ACL database using Kaggle's free GPU instances and the tool Sacred, hosting experiments on a free MongoDB database
- Demo at https://pyate-demo.herokuapp.com/ using React/Flask

Recycler: CV for classifying recyclables, 2020

- Fine-tuned Google's XCeption CNN on the Trashnet database, using Keras up to 87% accuracy, using Kaggle's free GPU instances
- Demo using Flask backend at https://recycler-cv.herokuapp.com/

Touchscreen using Wii Remote and IR Pen, 2020

- Built a Kivy app to turn any screen into a touchscreen using a Wii Remote and infrared pen for an inexpensive touchscreen
- Based on Johnny Chung's project, which used an outdated version of Java, I recreated it in Python using the open-sourced package cwiid

Research Mode: Chrome Extension for Research Assistance, 2020-present

- Adds a convenient sidebar for easy access to notes while conducting research, including reading, writing, and deleting notes, which are synced to a PostgreSQL database
- Simplifies current page and highlights and defines technical terms
- Several NLP features planned such as text simplification, auto-generated citations, summarizations and semantic search
- Uses React for frontend, with a Flask backend, which runs on Heroku

Machine Learning to Predict Rent Prices in Regina

- Scraped hundreds of rent data points from Kijiji
- Trained a random forest regressor to predict rent prices given features such as area, coordinates, distances to local areas, and utility coverage