Panos Karagiannis

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Education

- **University of California – Santa Cruz (UCSC)** — Santa Cruz, CA
  Master of Science, Computer Science; GPA: 3.8 — *Sept. 2016 – Dec. 2017*
  - Thesis: End-to-End Natural Language Generation using LSTM-based Neural Networks
  - Advisor: Marilyn Walker
  - Key Courses: Machine Learning, Advanced Topics in Machine Learning, Algorithms, Data Mining
  - Teaching assistant for Introduction to Analysis of Algorithms
  - Expected graduation: December 2017

- **University of California – Los Angeles (UCLA)** — Los Angeles, CA
  Bachelor of Science, Mathematics of Computation — *Sept. 2012 – June 2016*

Experience

- **IBM** — Boston, MA
  Cognitive Analytics and Deep Learning — *March 2018 – Current*
  - Part of the AI Innovations and Research team around Watson Assistant

- **University of California, Santa Cruz** — Santa Cruz, CA
  Deep Learning Research for NLP — *March 2017 – Current*
  - Part of the research team that explores attention based sequence to sequence neural models in natural language generation.
    * Attentional neural natural language generation
    * Sequence to Sequence models
    * Search algorithms to generate output sequences
    * NAACL publication under review
    * Frameworks: TensorFlow, Pandas, Scikit-learn, NumPy

- **Quality and Reliability** — Athens, Greece
  Machine Learning Developer — *July 2016 – Sept. 2016*
  - Part of the in the development team of the project "A study of the opinion and suggestions of the citizens through the collection, analysis and depiction of data from on line data sources" conducted for the needs of Municipalities.
    * Sentiment analysis using neural networks
    * Frameworks: TensorFlow, Keras

  Software Engineer — *Summer 2014 & 2015*
  - Part of the development team of the project "Management System of the Public Property" for the Ministry of Finance of Greece.
    * Participated in database design.
    * Developed data cleansing procedures.
    * Prepared user manuals and training material
    * Implemented testing procedures

Notable Academic Projects

End-to-End Natural Language Generation using LSTM-based Neural Networks ⬀ **:** Deep learning project developed as my master thesis but also for submission to the E2E NLG Challenge. The project utilizes neural networks to learn from unaligned data in order to jointly perform sentence planning and surface realizations. It uses an Encoder – Decoder architecture for sequence to sequence modeling.

Comparing Bayesian and LSTM Networks in Natural Language Generation ⬀ **:** Class research project focused on comparing a graphical and a deep learning approach in order to produce utterances given meaning representations in the restaurant domain.

Yelp Restaurant Recommendation System ⬀ **:** Machine learning class project that predicts whether a user will like or dislike a previously unvisited restaurant using the SVD algorithm.

Data Mining Projects ⬀ **:** Machine learning solutions to real world problems by combining Prediction ⬀ , Classification ⬀ , Clustering and Association Analysis ⬀ models. These projects involve the full machine learning pipeline from data retrieval and data cleansing to model creation and evaluation.

Smaller Projects : Artificial Intelligence Solver for Sokoban ⬀ , Linear Regression ⬀ , Linear Bayesian Regression ⬀ , Naive Bayes classification ⬀ , SVM classification ⬀ , Machine Learning Spam Filters ⬀ , KenKen Puzzle Solver ⬀ .

Technical Skills and Expertise

Programming Languages: Python (expert), C++ (proficient), Java (proficient), Scala (proficient), Common Lisp (prior experience), Scheme (prior experience), Prolog (prior experience), SQL (prior experience), Ocaml (prior experience), R (prior experience)

Machine Learning Tools : TensorFlow, Theano, Keras, Scikit-learn, Pandas, NumPy, NLTK

Applications : Matlab, Xcode, QGIS, Oracle JDeveloper, MySQL Developer, Git, Weka

Operating Systems: Unix, Linux, Windows, macOS

Languages: English (Fluent), Greek (Native language), Italian (Intermediate), French (Intermediate)