DAVID VENUTO

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EDUCATION

McGill University   Expected (May 2018)

B.Sc. in Computer Science & Biology   *Montreal, Quebec*

· Relevant Coursework: Machine Learning, Data Structures and Algorithms, Software Systems, Statistics, Probability Theory, Functional Programming, and Computational Biology.

· Starting Ph.D. in Computer Science in September 2018. School TBD.

EXPERIENCE

McGill/Genome Quebec Innovation Center   October 2015 - Present

Research Assistant   *Montreal, Quebec*

· Researching convex optimization methods for kernel machines and convolutional neural networks.

· Developed SVMcompare, a novel learning to rank method supporting equality pairs that was casted as a maximum margin problem solvable using quadratic programming. Performance was shown to be superior to state of the art ELO rankings for chess match outcome predictions.

· Studied comparative epigenomics methods for mining next generation sequencing data.

The University of Hong Kong   June - August 2016

Research Assistant   *Hong Kong, China*

· Developed PathwayLearn, an R application for preforming pathway analysis on gene expression data using heavily regularized models.

· Extracted, cleaned and visualized millions of lines of sequencing data. Identified optimal machine learning algorithms for pathway data.

RIKEN   May - August 2015

Research Intern   *Yokohama, Japan*

· Developed Python scripts for mining bioinformatics databases and prioritizing features.

· Optimized algorithms for 2D structure prediction of genetic sequences using convex strategies.

Blue Care Network   June - August 2014

Informatics Intern   *Southfield, Michigan*

· Preformed Statistical analysis on patient data to identify strategies that could lower total claims cost.

RESEARCH PUBLICATIONS

D Venuto, TD Hocking, L Sphanurattana, M Sugiyama. Support vector comparison machines. Preprint arXiv:1401.8008. *Under Review at JMLR.* 2017.

D Venuto, G Bourque. Identifying co-opted transposable elements using comparative epigenomics. *Development, Growth and Differentiation.* 2018.

C Kanagaratham, V Chiwara, B Ho, S Moussette, M Youssef, **D Venuto**, L Jeannotte, G Bourque, JB de Sanctis, D Radzioch, A Naumova. Loss of the zona pellucida binding protein 2 (Zpbp2) gene in mice impacts airway hypersensitivity and lung lipid metabolism in a sex-dependent fashion. *Accepted to Mammalian Genome.* 2018.

Conference Presentations

D Venuto, *et al.*, Comparative epigenomics in primate immune cells reveals putatively exapted transposable element families. *FASEB Meeting* 2017, Big Sky. (Short Talk)

D Venuto, *et al.*, Mapping functional non-coding transcripts in primate immune cells using comparative epigenomics. *IHEC* 2016, Brussels. (Poster)

MAJOR AWARDS

The Hong Kong PhD Fellowship Scheme (Declined Offer)

~130,000 USD over 4 years. (~1% Acceptance Rate)

Computer Languages	Python (scikit-learn, numpy, scipy, pandas), R, Java, UNIX, SQL, C, OCaml.
Machine Learning Skills	Classification, Regression, Clustering, Feature Engineering, Computer Vision, Neural Networks, Convex Optimization.
Statistical Methods	Time Series, Hypothesis Testing, Dimensionality Reduction.
Technical Skills	Git, Hadoop, RNA/DNA/ChIP sequencing analysis, LaTeX.
Employment Authorization	USA, Canada, EU.