Nicholas Ceglia

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Institute for Genomics and Bioinformatics, Rm 271
University of California, Irvine
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Education:

University of California, Irvine - June 2018
PhD, Computer Science Specializing in Bioinformatics
Advisor: Professor Pierre Baldi
University of California, Irvine - June 2013
Master of Science, Computer Science
University of Nevada, Reno - May 2011
Bachelor of Science, Computer Science
Graduated with Distinction, Minor in Mathematics

Technical Experience:

Languages: Python**,** C++, C, Scala, Java, Rust, Javascript, R, Go, Bash
ML Frameworks: Keras, TensorFlow, PyTorch, Pylearn, Theano, Spark, Sci-Kit Learn, CUDA, Thrust
Libraries: Pandas, Numpy, Scipy, Matplotlib, Seaborn
Bioinformatics Tools: Tophat, Cufflinks, Bowtie, Kallisto, Casava, Hisat2, Biopython, Bioconductor
Distributed: SGE, Hadoop, Google Cloud, Storm, Graphlab
Databases: MySQL/Maria, PostgreSQL, MongoDB, Hive, HBase, Solr, Cassandra
Web Development: Apache, Django, Flask, JQuery, D3.js

Research Experience:

Graduate Research Assistant, Dr. Pierre Baldi, UC Irvine Feb 2013 to June 2018
- Deep Learning Based Classification of Periodic Signals in Circadian RNA-Seq (BIO_CYCLE)
- PyCircadiomics: Pandas Based Python Library for Gene Level Analysis of Circadian Rhythms
- Clustering of Circadian Regulatory Features via Auto-Encoders
- Distributed RNA-Seq Processing Pipeline with Task Dependence Scheduling
- Web Based Reporting and Visualization Tools for Bioinformatic Collaborations (11 Publications)
- Built and Maintain CircadiOmics Web Application (http://circadiomics.ics.uci.edu)
- Protein Secondary Structure Prediction with Bidirectional RNN
- Document Classification of Published Abstracts - Dataset Discovery
- Data Mining for TF Binding Site, RBP Binding Site, Metabolite Pathway and Reaction Networks

Industry Experience:

Data Scientist Intern, The Retail Equation, Jan 2014 to Sept 2014
- Distributed Collection and Storage of Retailer Related Twitter Data
- Graph Based Classification of Retail Fraud Activity
- Geographic Retail Shrink Prediction using Sentiment Analysis of Twitter Data (Patent Pending)

Product Development Intern, MSC Software, Santa Ana, CA. May 2012 to Feb 2013
- Build and Continuous Integration Automation
- Regression Testing -Static Analysis - Code Coverage

Teaching Experience:
- Graduate Teaching Assistant - ICS 33 Intermediate Programming (Fall 2017 - Spring 2018)
- Graduate Reader - ICS 139W Communication Skills for Computer Scientists (Spring 2017)

Academic Projects:
- Framework for Studying Local Learning Rules in Neural Networks - *github.com/nceglia/Hebbian*
- Custom Compiler with Control Flow Graph Optimizations - *github.com/nceglia/nickyPL*
- Optimization Methods for Secondary Structure in RNA - *github.com/nceglia/RNASecondaryStructure*
- Weather Prediction via Random Forests - *github.com/nceglia/whatstheweath*

Professional Development:
- ACM Treasurer for University of Nevada, Reno Chapter 2010

Publications:

Dyar, Kenneth A., et al. **"Atlas of Circadian Metabolism Reveals System-wide Coordination and Communication between Clocks."** *Cell* 174.6 (2018): 1571-1585.

Ceglia, Nicholas, et al. "**CircadiOmics: Circadian Omic Data Web Portal**". Nucleic Acids Research, Web Server Issue, (2018).

Agostinelli, Forest, et al. **"What time is it? Deep learning approaches for circadian rhythms."** *Bioinformatics* 32.12 (2016): i8-i17.

Eckel-Mahan, Kristin L., et al. **"Reprogramming of the circadian clock by nutritional challenge."** *Cell* 155.7 (2013): 1464-1478.

Masri, Selma, et al. **"Partitioning circadian transcription by SIRT6 leads to segregated control of cellular metabolism."** *Cell* 158.3 (2014): 659-672.

Sahar, Saurabh, et al. **"Circadian control of fatty acid elongation by SIRT1 protein-mediated deacetylation of acetyl-coenzyme A synthetase 1."** *Journal of Biological Chemistry* 289.9 (2014): 6091-6097.

Patel, Vishal R., et al. **"The pervasiveness and plasticity of circadian oscillations: the coupled circadian-oscillators framework."** *Bioinformatics* 31.19 (2015): 3181-3188.

Abbondante, Serena, et al. **"Comparative circadian metabolomics reveal differential effects of nutritional challenge in the serum and liver."** *Journal of Biological Chemistry* 291.6 (2016): 2812-2828.

Ioris, Rafael M., et al. **"SIRT6 Suppresses Cancer Stem-like Capacity in Tumors with PI3K Activation Independently of Its Deacetylase Activity."** *Cell Reports 18.8 (2017): 1858-1868.*

Mazziotti, Raffaele, et al. **"Mir-132/212 is required for maturation of binocular matching of orientation preference and depth perception."** *Nature Communications 8 (2017).*

Liu, Sijia, et al. **"Genome Architecture Leads a Bifurcation in Cell Identity."** *bioRxiv (2017): 151555.*

Debski, Konrad, et al. **"The circadian hippocampus and its reprogramming in epilepsy: impact for chronotherapeutics."** *bioRxiv* (2017): 199372.