Ross Goodwin

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Objective

A research role in creative applications of data science and deep learning, with an emphasis on natural language processing

Data Science Experience

Google
New York, NY
January 2016 to Present

- Developing an interface to realize autocomplete for creative writing using long short-term memory (LSTM) recurrent neural networks (RNNs) for Google's Cultural Institute
- Training long short-term memory (LSTM) RNNs on prose and poetry to create a series of books for Google's Artists and Machine Intelligence program
- Trained convolutional neural network (CNN) / LSTM poetic image captioning systems to produce automatic voiceover for DeepDream VR, exhibited at Gray Area in San Francisco in February 2016 and the TriBeCa Film Festival Internative Showcase in April 2016
- Trained CNN/LSTM image captioning system to title DeepDream artwork by Mike Tyka

Buzzfeed
New York, NY
February 2017 to Present

- Building a skip-thought (sentence vector) model using data from Richard B. Spencer gathered via social media and LexisNexis, and using that model to find representations and relationships in semantic space between Spencer and other individuals and arbitrary user-supplied text
- Training an automatic image captioning model on Caroline Sinders' photographs and selected writings that will describe or narrate unseen images using a deep learning system composed of three artificial neural networks

Columbia University
New York, NY
June 2016 to January 2017

- Awarded art commission from EdLab at Teacher's College
- Created *word.camera@smith.learning.theater* , an art installation using six Axis pan-tilt-zoom surveillance cameras in conjunction with a CNN/LSTM expressive image captioning system to narrate activities within the Smith Learning Theater, a 6000-square-foot space at Teacher's College, in real time
- Trained LSTM RNNs on the complete Teacher's College academic archives to produce custom narration appropriate to the space
- Fabricated custom hardware appliance to handle all computation locally, communicate with surveillance cameras, and produce expressive narration

The Economist
New York, NY
March 2016 to December 2016

- Trained LSTM RNNs on news archives from The Economist as well as economic data to predict news from economic trends

DBRS & The Guardian
New York, NY
March 2016 to July 2016

- Selected as DBRS Innovation Lab Artist in Residence, June 2016
- Trained LSTM RNNs on technology news articles from The Guardian
- Produced machine-generated technology news articles for The Guardian

Fusion
New York, NY
August 2015 to April 2016

- Built a team of four creative technologists to analyze and report on online data from candidates in the 2016 U.S. Presidential Election
- Utilized natural language processing to produce articles with in-depth analysis for fusion.net

Ufora (internship)
New York, NY
June to August 2015

- Selected as HackNY Fellow for summer 2016
- Built a term frequency – inverse document frequency (TF-IDF) library for clustering natural language documents by topic in Fora, Ufora's proprietary programming language for automtic parallelization

Independent Creative Projects

Virus Crescit In Spiritum
Poison Growing on a Breath (installation)

- Recorded self for two months (November 2016 to January 2017) with a lavalier microphone pinned to coat's lapel
- Ran speech-to-text algorithm on audio to produce text transcript
- Trained LSTM RNN on text transcript to make a bot that talks like me
- Trained a text-to-speech synthesizer model on my own voice
- Applied for grants and installation space to install a mannequin dressed in my clothes that will whisper in my voice forever
- Ideally, every two-to-nine years, planning to add a new mannequin using technology that exists in the future to evenetually create a circle of mannequins whispering to one another

Word Car (generative road trip)

- With support from Google's Artists and Machine Intelligence program, drove a Cadillac XTS from Brooklyn, NY, to New Orleans, LA, with an Axis pan-tilt-zoom surveillance camera on the trunk, a GPS unit on the roof, a microphone inside the car, and a clock to narrate the journey automatically in conjunction with a collection of LSTM RNN models
- Accompanied by a documentary film crew — film and generated book to be released later this year

Sunspring & It's No Game (short films)

- A short film created from a screenplay generated by an LSTM RNN, which I trained on science fiction screenplays, directed by Oscar Sharp, starring Thomas Middleditch ("Richard Hendricks" on HBO's Silicon Valley), released via Ars Technica in June 2016
- Both films written, shot, and edited in 48 hours for the Sci-Fi-London 48 Hour Film Challenge, where Sunspring made the contest's top 10 films and received an honorable mention (2017 results pending)
- Sunspring was featured in over 100 news articles, and received over one million unique views online.
- Trained new LSTM models and released a follow-up film, *It's No Game* , directed by Oscar SHarp, starring David Hasselhoff, released on YouTube via Ars Technica in April 2017.

Narrated Reality (installations + apps)

- Exhibited word.camera, a collection of machine intelligence image-to-text translators, at the International Documentary Film Festival in Amsterdam (December 2015), Phi Centre in Montreal (Summer 2016), Future of Storytelling Festival NYC (August 2016), and Science Gallery Dublin (currently installed)
- Built each camera as a computer inside an antique film camera, using various system on chip computers, and more recently full mini-ITX motherboards
- Exhibiting a solo show at Rubber Factory, an art gallery in NYC, featuring the latest word.camera prototypes in late 2017
- Created a camera, compass, and clock that narrate images, location, and time respectively using machine intelligence for NYU ITP Thesis.
- Began with original https://word.camera web app, built for an assignment at ITP, and launched in April 2015.
- Documentation essays on Medium: https://medium.com/@rossgoodwin

lexiconjure (bot)

- A twitter/tumblr bot that generates definitions for invented words, and invented definitions for real words, using an LSTM RNN trained on the Oxford English Dictionary

Policy & Writing Career(2006 to 2014)

U.S. Department of the Treasury

Financial Stability Oversight Council (FSOC)

Special Assistant for FSOC Policy

- Developed operations processes to stand up the Financial Stability Oversight Council (FSOC), a new agency created by the Dodd-Frank Wall Street Reform & Consumer Protection Act
- Drafted and edited FSOC-related Congressional testimony, talking points, and official correspondence for the Treasury Secretary and other senior FSOC officials

Office of the Chief of Staff and Executive Secretariat

Special Assistant

- Modernized and automated document management processes for paper flow between Secretary Geithner and other senior officials to improve openness, transparency, and efficiency
- Wrote the Treasury Department's Weekly Report to the White House.
- Established and maintained a unified "Q&A Book" to ensure the Secretary, Deputy Secretary, and other senior Treasury officials delivered consistent messages during public appearances
- Drafted official memoranda, issued by Treasury's Chief of Staff and Executive Secretary, to establish and enforce agencywide processes
- Selected, compiled, and delivered Secretary Geithner's daily briefing materials, including information memoranda, working documents, external reports, and correspondence

The White House

Presidential Writer, Coordinator for Proclamations

- Wrote over 60 Presidential Proclamations for President Obama, including the President's first Thanksgiving Day and Martin Luther King, Jr., Federal Holiday proclamations, and initiated new observances, including National Entrepreneurship Week and Cesar Chavez Day
- Coordinated content and built consensus among advisors in policy-making offices at the White House

Obama-Biden Transition Project

Chicago, IL,
and
Washington,
DC
November
2008 to
January 2009

Staff, Presidential Transition Team

- Processed CVs, recommendation letters, and other materials from candidates for senior political appointments in the Obama administration

Obama for America

Communications Coordinator, Republicans for Obama

- Developed and delivered a pragmatic message through online and print media to urge moderate Republican voters to support Barack Obama, and to publicize high-profile Republican endorsements

U.S. Senator John Kerry, Senate Committee on Small Business and Entrepreneurship

Boston, MA,
and
Washington,
DC
September
2006 to
August 2007

Speechwriting Intern / Committee Intern

- Wrote op-eds, talking points, speech segments, press releases, and letters for Senator Kerry
- Managed constituent casework related to healthcare, energy, and environmental policy

Technical Skills

Python, JavaScript, HTML/CSS, Torch, Processing, Arduino

for

Data Science, Machine Learning, Natural Language Processing, Natural Language Generation, Computer Vision, Data Visualization, &c.

Education

New York University

Master of Professional Studies, Interactive Telecommunications Program (ITP)

- Received Google Experiments in Storytelling grants for spring 2015, fall 2015, and spring 2016 semesters
- Lead numerous seminars on natural language processing, machine learning, and basic programming
- Thesis project details: http://narratedreality.com
- More project details: http://thehypertext.com

Massachusetts Institute of Technology

Bachelor of Science, Economics (Course XIV)

- Researched foreign policy rhetoric of American politicians and other topics under the guidance of Professor Noam Chomsky
- Managed *Delve*, an education outreach program that provided free full-year AP classes for local high school students
- Burchard Scholar, 2007 (MIT School of Humanities, Arts, and Social Sciences)
- Dana Mead Award, 2007 (MIT Washington DC Internship Program)

University of Cambridge

Cambridge-MIT Exchange

- Competed on the Cambridge Union's British Parliamentary debate team