

Jason Cramer

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EDUCATION

NYU TANDON

PHD IN ELECTRICAL ENGINEERING
Aug 2017 - Present | Brooklyn, NY
GPA: 3.967

UC BERKELEY

B.S. IN ELECTRICAL ENGINEERING
AND COMPUTER SCIENCES, HONORS
EECS Honors Program - Music/Audio
Aug 2011 - May 2015 | Berkeley, CA
GPA: 3.798

SALESIANUM SCHOOL

HIGH SCHOOL DIPLOMA
Aug 2007 - May 2011 | Wilmington, DE
GPA: 4.3

COURSEWORK

GRADUATE

Machine Learning & Artificial Intelligence
Machine Listening & MIR
3D Audio
Digital Signal Processing
Probability and Stochastic Processes
Statistical Signal Processing
Statistical Learning Theory

UNDERGRADUATE

Data Structures & Algorithms
Music Perception and Cognition
Computer Music
Compilers and Languages
Parallel Programming

SKILLS

DIGITAL SIGNAL PROCESSING

Wiener filtering • Noise suppression for
speech enhancement systems

MACHINE LEARNING

Deep Learning • SVMs • NMF/PLCA •
Markov models

PROGRAMMING

Python • Matlab • C • C++ • Scala • Java
• HTML • \LaTeX • JavaScript • UNIX Shell

MUSIC INFORMATION RETRIEVAL

Genre and mood classification • Source
separation • Structural segmentation

MISC.

AWS • Visualization • Web applications

RESEARCH

MUSIC AUDIO RESEARCH LABORATORY

JUAN BELLO, JUSTIN SALAMON

GRADUATE STUDENT RESEARCHER

September 2017 - Present | New York, NY

As a part of the machine listening team of the [SONYC](#) project, investigating self-supervised learning of an effective deep audio embedding using the structure found in audio-visual correspondence as well as temporal relationships in acoustic sensor network data. As a part of the [BirdVox](#) project, investigating utilization using hierarchical annotations and deep learning architectures for bird species classification in flight call recordings.

NVIDIA

BRYAN CATANZARO, RAFAEL VALLE, RYAN PRENGER

APPLIED DEEP LEARNING RESEARCH INTERN

May 2018 - August 2018 | Santa Clara, CA

Investigated text-informed audio inpainting methods using text-to-speech inspired sequence-to-sequence models.

GRACENOTE APPLIED RESEARCH

MARKUS CREMER, BOB COOVER

AUDIO RESEARCH ENGINEER

June 2015 - July 2017 | Emeryville, CA

Researched and developed machine learning models to perform classification of musical audio signals for tasks such as genre classification, vocal detection, and fingerprint query optimization.

CENTER FOR NEW MUSIC & AUDIO TECHNOLOGY

DAVID WESSEL, EDMUND CAMPION

UNDERGRADUATE RESEARCHER

August 2014 - May 2015 | Berkeley, CA

Worked with [Prof. David Wessel](#), [David Bourgin](#), and [Rafael Valle](#) to model musical sequences for the task of machine improvisation using an extension of author-topic modeling.

STATISTICAL LEARNING THEORY (COURSE)

BEN RECHT

STUDENT

October 2014 - December 2014 | Berkeley, CA

For [class research project](#), developed an online algorithm for performing source separation of instruments in musical audio streams using an adaptation of PLCA.

MUSIC PERCEPTION AND COGNITION (COURSE)

DAVID WESSEL, MATTHEW GOODHEART

STUDENT

Oct 2014 - Dec 2014 | Berkeley, CA

For class research project, developed an online algorithm for performing source separation of instruments in musical audio streams using source-filter models, using the FAAST library.

VIDEO AND IMAGE PROCESSING LAB

AVIDEH ZAHKOR

UNDERGRADUATE RESEARCHER

Sept 2013 - May 2014 | Berkeley, CA

Worked with [Omar Oreifej](#) and [Prof. Avidesh Zahkor](#) to develop a visualization tool to demonstrate the utility of a [indoor modeling device](#) for energy auditing.

MISC. PROJECTS

SONYC-UST

DATASET

Dataset of audio clips from SONYC acoustic sensor network with multi-label noise source annotations.

OPENL3

OPEN SOURCE SOFTWARE

Open-source implementation of deep audio embedding models along with pre-trained models.

TIDEGAN

CLASS PROJECT

A style transfer model for audio using cycle-consistent generative adversarial networks.

MARKOVMIXER

DESIGNED LAB/PROJECT

A project starter kit for students to extend. Generates a real time DJ mix using a parameterizable Markov chain with transitions.

FORTISSIMO

CLASS PROJECT

Music programming language for making simple programmatic music. Video [here](#).

AWARDS & HONORS

- 2018 ECE MS Student Award
NYU Tandon
- 2017 Samuel Morse MS Fellowship
NYU Tandon
- 2016 Music/Auto Challenge
Gracenote 5.0 Hackathon
- 2015 Auto Podcast Challenge
Gracenote 4.0 Hackathon
- 2013 3rd Place
CSUA Hackathon
- 2013 3rd Place
Code 4 Cal Hackathon
- 2011 Edward Frank Kraft Award
UC Berkeley

SOCIETIES

- 2015 MIR @ Berkeley Cofounder
- 2012 C.S. Undergraduate
Association Member
- 2012 Eta Kappa Nu Honor Society
Member

PUBLICATIONS

J. Cramer, H.-H. Wu, J. Salamon, and J. B. Bello, “Look, listen and learn more: design choices for deep audio embeddings,” in *2019 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP '19*, 2019.

C. Summers, G. Tronel, J. Cramer, A. Vartakavi, and P. Popp, “GNMID14: A Collection of 110 Million Global Music Identification Matches,” in *Proceedings of the 39th International ACM SIGIR Conference*, SIGIR '16, 2016.

O. Oreifej, J. Cramer, and A. Zakhori, “Automatic Generation of 3D Thermal Maps of Building Interiors,” in *ASHRAE*, 2014.

PATENTS

M. Cremer, J. Cramer, P. Popp, and C. Summers, “Responding to remote media classification queries using classifier models and context parameters,” July 6 2017. US Patent App. 15/185,616.

J. Cramer, M. Cremer, P. Popp, and C. Summers, “Model-based media classification service using sensed media noise characteristics,” July 6 2017. US Patent App. 15/185,654.

INDUSTRY

NVIDIA

APPLIED DEEP LEARNING RESEARCH INTERN

May 2018 – August 2018 | Santa Clara, CA

Investigated audio inpainting methods using text-to-speech inspired sequence-to-sequence models.

GRACENOTE

AUDIO RESEARCH ENGINEER

June 2015 – July 2017 | Emeryville, CA

Researched and developed audio classifiers to describe attributes of music.

BLUE JEANS NETWORK

MEDIA SOFTWARE ENGINEERING INTERN

May 2014 – August 2014 | Mountain View, CA

Refactored and improved the WebRTC and Speex noise suppression modules.

GUIDEWIRE

SOFTWARE ENGINEERING INTERN

June 2013 – August 2013 | Foster City, CA

TEACHING

INTRODUCTION TO MACHINE LEARNING (ECE-GY 6143)

ANNA CHOROMANSKA

TEACHING ASSISTANT

September 2018 – December 2018 | NYU Tandon | Brooklyn, NY

PROBABILITY AND STOCHASTIC PROCESSES (EE 126)

ABHAY PAREKH

UNDERGRADUATE STUDENT INSTRUCTOR

January 2015 – May 2015 | UC Berkeley | Berkeley, CA

STRUCTURE AND INTERPRETATION OF SIGNALS AND SYSTEMS (EE 20N)

BABAK AYAZIFAR

UNDERGRADUATE STUDENT INSTRUCTOR

August 2014 – December 2014 | UC Berkeley | Berkeley, CA