Jason Cramer

✉ jason.t.cramer@gmail.com | 📱 302.353.9587 | ⬛ jtcramer | 🔲 jtcramer

EDUCATION

NYU TANDON
M.S. in Electrical Engineering
Samuel Morse MS Fellow
Aug 2017 - May 2019 | Brooklyn, NY
GPA: 3.9

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
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 relationship between audio and visual content in videos available on the internet. Evaluating the efficacy of these and other audio embeddings for the task of urban sound classification.

GRACENOTE APPLIED RESEARCH
Markus Cremer, Bob Coover
Audio Research Engineer
June 2015 – July 2017 | Emeryville, CA
Researched and developed machine learning algorithms (primarily using deep 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
Aug 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 a generative model that extends the Variable-Length Markov Model/Latent Dirichlet Allocation method of encoding musical topics as well as an additional "author" factor. Contributed to the implementation of the algorithm code.

STATISTICAL LEARNING THEORY (COURSE)
Ben Recht
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 an adaptation of PLCA. A dictionary of templates for instruments was learned separately on the harmonic and percussive parts of instrument samples to better model the attack and sustain of notes.

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. Avideh Zahkor to develop a visualization application to demonstrate the utility of a indoor modeling backpack device for energy auditing. The application allowed users to step through visible-light/infrared images of a walkthrough, navigate and view the backpack position and orientation on a map, and view/create annotations in 3D space.

OTHER PROJECTS

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 between autocorrelation peaks.

FORTISSIMO
CLASS PROJECT
Music programming language for making simple programmatic music. Video here.

AUGMENTED REALITY DIGITAL AUDIO WORKSTATION
HACKATHON PROJECT
Web app using AR trackers as parameter tuners for waveforms and instruments to create live music

PANDAPHONE
CLASS PROJECT
LeapMotion Instrument using Markov chains trained on a MIDI dataset to create atmospheric soundscapes

AWARDS & HONORS

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
2011 Top of Class Salesianum School

SOCIETIES

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

HOBBIES
Piano • Synthesizers • Drumming • Listening to music • Attending concerts • Rhythm-based video games

PUBLICATIONS

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 on Research and Development in Information Retrieval*, SIGIR '16, (New York, NY, USA), pp. 693–696, ACM, 2016.

O. Oreifej, J. Cramer, and A. Zakhor, "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

GRACENOTE
AUDIO RESEARCH ENGINEER
June 2015 – July 2017 | Emeryville, CA
Researched and developed audio classifiers to describe attributes of music. Developed AWS applications for ingesting and processing audio content.

BLUE JEANS NETWORK
MEDIA SOFTWARE ENGINEERING INTERN
May 2014 – Aug 2014 | Mountain View, CA
Refactored and improved the WebRTC and Speex noise suppression modules, resulting in better MOS score.

GUIDEWIRE
SOFTWARE ENGINEERING INTERN
Jun 2013 – Aug 2013 | Foster City, CA
Developed optimization framework based on simulated annealing for managing virtual machines to balance cost and testing performance.

SIEMENS HEALTHCARE DIAGNOSTICS
SOFTWARE ENGINEERING INTERN
Jun 2012 – Aug 2012 | Glasgow, DE
Developed log parsing and statistical analysis application and its UI for developers, testers, and technicians.

TEACHING

PROBABILITY AND STOCHASTIC PROCESSES (EE126)
ABHAY PAREKH
UNDERGRADUATE STUDENT INSTRUCTOR
Jan 2015 – May 2015 | Berkeley, CA
Facilitated homework collaboration sessions for students, improved and designed labs, administered exams, and generally assisted students in their study.

STRUCTURE AND INTERPRETATION OF SIGNALS AND SYSTEMS (EE20N)
BABAK AYAZIFAR
UNDERGRADUATE STUDENT INSTRUCTOR
Aug 2014 – Dec 2014 | Berkeley, CA
Taught recitation sessions, facilitated lab sessions, administered exams, and generally assisted students in their study.