

# CURRICULUM VITAE

**Kenny Chou**

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## EDUCATION

Boston University – Boston, MA

- Ph.D. Candidate in Biomedical Engineering. Degree expected May 2020.

University of Washington – Seattle, WA

- Bachelor of Science in **Bioengineering**, March 2013
- Bachelor of Science in **Electrical Engineering** – Concentration in Digital Signal Processing, March 2013
- Minor in Mathematics

## RESEARCH EXPERIENCE

Sen Lab (BU), 2016 – Present

*Sound Source Segregation Based on Auditory Physiology*

- Model mechanisms for sound source segregation in the avian midbrain and auditory cortex based on experimental data, using spiking neural networks.
- Design sound source segregation algorithm based on avian midbrain model
- Conducted psychoacoustic experiments to evaluate the benefit to human listeners provided by the aforementioned algorithm.

Dennis Lab (BU), 2014 – 2016

*Biosensor for hormone detection using Quantum Dot (QD) Förster Resonance Energy Transfer (FRET)*

- Designed sensors for sensing hormones secreted in sweat and saliva based on QD to QD FRET.
- Collaborated with an interdisciplinary team across the College of Engineering.

*Development of Next Generation, Non-Toxic, Quantum-Shelled Quantum Dots*

- Developed recipes for non-toxic (cadmium free) quantum-shelled quantum dots consisting of indium phosphide cores and zinc sulfide shells. Synthesized these QDs via oxygen-free chemistry, wet chemistry, and SILAR. Characterized QDs with TEM and spectroscopy.

Center for Computational Neuroscience and Neural Technology (BU), 2013

*Bidirectional audiovisual interactions: Evidence From a Computerized Fishing Game*

- Implemented a java-based game and explored audiovisual interaction by conducting psychophysical experiments using the game. Presented results at ASA conference 2014, Providence, RI.

Human Photonics Lab (UW Mechanical Engineering), 2010-2013

*Optimal Projection Tomographic Microscopy (OPTM) for 3D Whole Tissue Imaging*

- Developed an image processing algorithm for 3D image stitching of OPTM data.
- Collaborated with a local start-up to develop and profiled the performance of OPTM algorithm across different hardware platforms.

## **TEACHING EXPERIENCE**

Graduate Teaching Fellow (2018) – Computational Linear Algebra

- Lead discussion, review sessions, taught MATLAB, and provided extra help to a class of 240 students.

Graduate Teaching Fellow (2017) - Critical Literature Review

- Graded and provided feedback to a class of 25 Ph.D. students.

Graduate Teaching Fellow (2016) – Signals and Systems in Biomedical Engineering

- Held discussion sections and office hours. Created and held review sessions for midterms. Gave one lecture in place of the professor.

Graduate Teaching Fellow (2015) – Control Systems in Biomedical Engineering

- Prepared materials for discussion sections, assignments, and exams. Held biweekly discussion sections.

## **MENTORSHIP**

Research in Science and Engineering Mentor (2015, 2017)

- Mentor and guide high school juniors and seniors doing college level research for the first time.
- Teach skills including: primary literature search, programming, digital signal processing, independent research.

## HONORS/AWARDS

- ✦ Cross-Disciplinary Training in Nanotechnology and Cancer Research Fellowship (2015)
- ✦ Center for Computational Neuroscience and Neural Technology Travel Grant (2014)
- ✦ National Institute of Health Quantitative Biology and Physiology Training Fellowship (2013)
- ✦ National Science Foundation Graduate Research Fellowship Program - Honorable Mention (2013)
- ✦ Boston University – Distinguished Biomedical Engineering Fellowship (2013)
- ✦ National Science Foundation Graduate Research Fellowship Program - Honorable Mention (2012)
- ✦ Washington Research Foundation Fellowship (2012)
- ✦ Washington Research Foundation Fellowship (2011)
- ✦ National Science Foundation Research Experience for Undergraduates Fellow (2011)
- ✦ Summer Undergraduate Research Fellowship (2010)

## PEER-REVIEWED RESEARCH PUBLICATIONS – h-index: 5 (Google Scholar)

**Kenny Chou**, Junzi Dong, H Steven Colburn, and Kamal Sen. “A physiologically Inspired Model for Solving the Cocktail Party Problem.” *Journal of the Association for Research in Otolaryngology* (2019). doi: 10.1007/s10162-019-00732-4.

Leonard Varghese, Samuel R. Mathias, Seth Bensussen, **Kenny Chou**, Hannah R. Goldberg, Yile Sun, Robert Sekuler, and Barbara G. Shinn-Cunningham. Bi-directional audiovisual influences on temporal modulation discrimination. *The Journal of the Acoustical Society of America*. 141, 2474 (2017); doi: <http://dx.doi.org/10.1121/1.4979470>

Aquino, Patricia, Honda Brent, Jaini Suma, Lyubetskaya Anna, Hosur Krutika, Chiu Joanna G., Ekladius Iriny, Hu Dongjian, Jin Lin, Sayeg Marianna K., Stettner Arion I., Wang Julia, Wong Brandon G., Wong Winnie S., Alexander Stephen L., Ba Cong, Bensussen Seth I., Bernstein David B., Braff Dana, Cha Susie, Cheng Daniel I., Cho Jang Hwan, **Chou Kenny**, Chuang James, Gastler Daniel E., Grasso Daniel J., Greifenberger John S., Guo Chen, Hawes Anna K., Israni Divya V., Jain Saloni R., Kim Jessica, Lei Junyu, Li Hao, Li David, Li Qian, Mancuso Christopher P., Mao Ning, Masud Salwa F., Meisel Cari L., Mi Jing, Nykyforchyn Christine S., Park Minhee, Peterson Hannah M., Ramirez Alfred K., Reynolds Daniel S., Rim Nae Gyune, Saffie Jared C., Su Hang, Su Wendell R., Su Yaqing, Sun Meng, Thommes Meghan M., Tu Tao, Varongchayakul Nitinun, Wagner Tyler E., Weinberg Benjamin H., Yang Rouhui, Yaroslavsky Anastasia, Yoon Christine, Zhao Yanyu, Zollinger Alicia J., Stringer Anne M., Foster John W., Wade Joseph, Raman Sahadaven, Broude Natasha, Wong Wilson W., Galagan James E. Coordinated Regulation of Acid Resistance in *Escherichia coli*. *BMC Systems Biology*. (2017)

**Chou KF**, Dennis, A. Förster Resonance Energy Transfer between Quantum Dot Donors and Quantum Dot Acceptors. *Sensors* 15, 13288–13325 (2015).

**Chou KF**, Miao Q, Coe RL, Seibel EJ. 3D Imaging of Fine Needle Aspirates Using Optical Projection Tomographic Microscopy. *J Cytol Histol* S2:001. (2012). doi:10.4172/2157-7099.S2-001

## **PATENTS**

✦ U.S. Patent No. US 10,536,775

## **PEER-REVIEWED BOOK CHAPTERS**

Coe RL, Miao Q, **Chou KF**, Meyer MG, and Seibel EJ. Isometric 3D imaging of Cellular Samples Using Optical Projection Tomographic Microscopy. (2012). Chpt. 15 in *Advanced Biophotonics: Tissue Optical Sectioning*, Eds. Valery Tuchin and Ruikang K. Wang, Taylor & Francis Books, pages 551-590. ISBN 9781439895818.

## **CONFERENCE PRESENTATIONS**

**Kenny F Chou**, H Steven Colburn, Kamal Sen (Dec 2019). A Biologically-Oriented Sound Segregation Algorithm. Poster Presentation at the Winter meeting of Acoustical Society of America, San Diego, CA.

**Kenny F Chou**, H Steven Colburn, Kamal Sen (Oct 2019). A Cortical Network Model for Solving the Cocktail Party Problem using Spatial Attention. Poster Presentation at the annual Society for Neuroscience meeting, Chicago, IL.

**Kenny F Chou**, H Steven Colburn, Kamal Sen (Oct 2019). Binaural Sound Source Segregation Algorithm Based on the Barn-Owl Midbrain. Podium presentation at the Annual Binaural Bash, Boston, MA.

**Kenny F Chou**, H Steven Colburn, Kamal Sen (Feb 2019). A Physiology-Based Time-Frequency Mask Estimation Method for Auditory Scene Analysis. Poster Presentation at the Annual Meeting of the Association for Research in Otolaryngology, Baltimore, MD

**Kenny F Chou**, H Steven Colburn, Kamal Sen (Oct 2018). A Cortical Time-Frequency Mask for Auditory Scene Analysis. Poster Presentation at the Advanced Perspectives in Auditory Neuroscience, San Diego, CA

**K Chou**, J Dong, H.S. Colburn, and K Sen (Feb 2018). A Spatial Sound Processing Algorithm Based on the Avian Auditory Cortex. Poster Presentation at: Annual Meeting of the Association for Research in Otolaryngology, San Diego, CA.

**K Chou**, J Dong, H.S. Colburn, and K Sen (Nov 2017). A Model of the Auditory Pathway in the Context of the Cocktail Party Problem. Poster Presentation at: Annual Symposium of Advances and Perspectives in Auditory Neuroscience, Washington, D.C.

Nidal Hishmeh, **Kenny Chou**, Anna Chambers, Jennifer Resnik, Daniel Polley & Kamal Sen (Nov. 2014). Neural Coding of Multidimensional Stimuli in Auditory Cortex. Poster Session at Advances and Perspectives in Auditory Neurophysiology, Washington DC.

Seth Bensussen, **Kenny F Chou**, Lenny A Varghese, Yile Sun, David C Somers, Robert Sekuler, and Barbara G Shinn-Cunningham (May 2014). Bidirectional audiovisual interactions: Evidence From a Computerized Fishing Game. Poster Session at the Acoustical Society of America, Providence, RI.

**Kenny Chou**, Ryan L. Coe, Qin Miao, and Eric J. Seibel (May 2012). 3D Multi-Cell

and Tissue Imaging for Improving Diagnostic Accuracy. Poster Session at University Washington Undergraduate Research Symposium. Seattle, Washington. **Kenny Chou**, Ryan L. Coe, and Eric J. Seibel (May 2011). Enhancing Computation Performance of Image Dilation with CUDA-Enabled GPU. Poster Session at University Washington Undergraduate Research Symposium. Seattle, Washington.

## ACTIVITIES

- Co-organizer - Boston Academic Researchers Symposium – (2018)  
collaborated with representatives from five other Boston area Universities to plan and organize the inaugural BARS conference, involving poster presentations and a panel of speakers. Attended by over 100 researchers.
- BU Hearing Research Seminars – Organized weekly seminars (2017 – 2018)  
by inviting and hosting industry and academic leaders.
- PR Rep and Webmaster – BU Student Association of Graduate (2015 – 2020)  
Engineers. Collaborated with a group of ~10 members to organize ~15 events a year. Composed bi-monthly emails to an audience of 800 subscribers.
- Chair & Co-Founder – BU BME Graduate Student Seminar (2015 – 2018)  
Series
- BME Departmental Seminar Committee – recruit high-profile (2015 – 2017)  
speakers and host a seminar (David Cook, CSO, Seres Therapeutics)
- Social Chair and Webmaster – BU BME Graduate Student (2015 – 2017)  
Committee
- Member – BU Science and Engineering Business Group (2014)
- Journal Club Committee – QBP training fellows (2013)
- Academic Committee Member and Webmaster – BU Graduate (2013, 2014)  
Student Committee
- Reviewer – UW Undergraduate Research Symposium (2012, 2013)  
Committee
- Martial Artist - 6x Gold Medalist – International Chinese (2011, 2012)  
Martial Arts Championship (San Fran., Seattle), 2x Gold Medalist – International Can-Am Championships (Vancouver, BC)
- Member – Tau Beta Pi Engineering Honor Society (2010 – 2013)