HAOYU SHENG

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EDUCATION

Williams College, Williamstown, Massachusetts *August 2016 - June 2020*

Bachelor of Arts in **Computer Science** and **Economics** (with Highest Honors)

Relevant Coursework: Applied Real Analysis, Abstract Algebra, Linear Regression and Forecasting, Probability, Measure Theory, Natural Language Processing,Price and Allocation Theory, Game Theory, Global Macro Instability and Finance, Monetary Economics, Financial Crises: Causes & Cures, Developing Country Macroeconomics

RELEVANT WORK EXPERIENCE

Economics Research Assistant, Harvard University *June 2019 - June 2020*

- Assisted David Y. Yang and Professor Yanhui Wu with analyzing the advancement of newspaper multimedia in China and examining whether images evolve at varying paces for different news categories.
- Webscraped PDF files for major Chinese newspapers from 2003 to 2012 and applying computer vision methods to gather information such as color, size, and caption for newspaper images.

Economics Research Assistant, Williams College *June 2019 - Aug 2019*

- Assisted Professor Kuttner with measuring the effectiveness of macroprudential policies for 57 economies by calculating the portion of policy actions counter-cyclical to property prices and housing credit.
- Proposed a new business cycle identification method that introduces the "zone of inaction," a period that is neither "boom" nor "bust" and in which governments will not take action. The proposed method allowed for a more realistic estimation for government policy-making processes.

Computer Science Research Assistant, Williams College *Sept 2018 - Jan 2019*

- Created interactive explainables for Bayesian Knowledge Tracing and analyzed its interpretability with Professor Iris Howley.

Research Intern, Mobvoi Inc AI Lab *June 2018 - Aug 2018*

- Implemented language model knowledge distillation techniques to reduce size and improve portability for large speech recognition deep learning models.

Teaching Assistant, Williams College *Aug 2017 - June 2020*

- Hosted sessions to help students understand concepts in financial economics, such as lerverage cycle and OLGs, and graded assignments.
- Courses TA'ed include: Algorithms Design & Analysis (Spring 2018 & Fall 2018), Price and Allocation

Theory (Fall 2017 & Spring 2019), Global Macro Instability and Finance (Fall 2019, Senior Seminar), and Game Theory (Spring 2020).

PUBLICATIONS

Shi, Y., Hwang, M., Lei, X., and **Sheng, H.** (2019). Knowledge Distillation for Recurrent Neural Network Language Modeling with Trust Regularization. In *ICASSP 2019 - 2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 7230–7234

Howley, I., **Sheng, H.**, and Zhou, T. (2020). Assessing Post-hoc Explainability of the BKT Algorithm. In *2020 AAAI/ACM Conference on AI, Ethics, and Society (AIES'20)*

Miller, S., **Sheng, H.**, and Turek, D. (Accepted). When Rooks Miss: Probability through Chess. In *The College Mathematics Journal*

Holmes, W., Bektik, D., Woolf, B., Bosch, N., Doroudi, S., Howley, I., Sharples, M., **Sheng, H.**, and Zhou, T. (in review). Ethics in AIED: Who Cares? In *Journal of Learning, Media, and Technology*

AWARDS

Carl Van Duyne Prize in Economics (awarded to distinguished thesis candidates in Economics) *2019*

Class of 1960 Scholar in both Computer Science and Economics *2018-2019*

EXTRACURRICULAR

Vice President of Academic Affairs, College Council *Feb 2019 - Feb 2020*

- Responsible for student government policy and programming initiatives in areas of academic and intellectual life.
- Serve on the Committee on Educational Affairs and represent student voice on academic issues.

Club Men's Water Polo *Aug 2016 - Nov 2019*

- Compete in intercollegiate water polo tournaments.
- Served as team treasurer in the 2018-2019 academic year and was in charge of team traveling finances.

SKILLS

Languages: Native in Mandarin and Cantonese.

Programming Languages: R, Python, Stata, RATS, Java, JavaScript, C++, C, ML, Scala, Lisp.

Github Repo: https://github.com/hs97