Elizabeth E. Salesky

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Education

- **Johns Hopkins University**   **Baltimore, MD**
  Ph.D. in Computer Science   *08/2019 – Present*

- **Carnegie Mellon University**   **Pittsburgh, PA**
  M.Sc. in Language Technologies   *08/2017 – 05/2019*

- **Dartmouth College**   **Hanover, NH**
  B.A. in Linguistics and Mathematics   *09/2008 – 06/2012*

  Additional Education
  Massachusetts Institute of Technology, Speech Recognition   *Spring 2017*
  Linguistic Society of America, Linguistic Summer Institute   *July 2015*
  Massachusetts Institute of Technology, Cognitive Science   *Spring 2014*

Awards

- **Apple Scholars in AI/ML PhD Fellowship**   **2022**

- **Interpretability Prize, SIGMORPHON**   **2019**

- **Women in Defense HORIZONS Scholarship**   **2018**

- **IEEE SPS Travel Award**   **2018**

- **Honors in Linguistics**   **2012**

- **Citation in Intro to Computational Linguistics**   **2011**

Experience

- **Apple AI/ML**   **Seattle, WA, USA**
  Research Intern   *06/2023 – 09/2023*

- **Google Brain**   **Mountain View, USA**
  Research Intern   *09/2022 – 12/2022*

- **Facebook AI Research**   **New York City, USA**
  Research Intern   *05/2022 – 08/2022*

- **ETH Zürich, Media Tech Center**   **Zürich, Switzerland**
  Graduate Student Intern   *10/2020 – 03/2021*
  Researched translation and evaluation of models of dialectal speech and text

- **JSALT Summer Workshop**   **Montreal, Canada**
  Graduate Student Intern   *06/2019 – 08/2019*
  Researched machine translation of noisy text from social media

- **Karlsruhe Institute of Technology**   **Karlsruhe, Germany**
  Mitarbeiterin (Research Staff)   *05/2018 – 08/2018*
  Researched implicit removal of disfluencies in end-to-end speech translation;
  Created new dataset to facilitate research and evaluation of this task

  Mitarbeiterin (Research Staff)   *06/2017 – 08/2017*
  Researched end-to-end models for speech-to-text translation;
  Researched neural models for re-punctuation and casing between ASR and MT steps in SLT

- **MIT Lincoln Laboratory**   **Lexington, MA**
  Assistant → Associate Staff   *11/2012 − 06/2017*
  Researched novel alignment and inflection generation techniques for machine translation;
  Researched adaptation techniques for translation with limited parallel data;
  Incorporated linguistic features into translation and text difficulty assessment applications;
  Trained competitive speech and text translation systems for international evaluation campaigns;
  Created an interface for an audio keyword searching system and ran Mechanical Turk experiments
  to determine user efficacy with different amounts of training data

Teaching

- **HEART: Modeling Spoken Language Translation**   **Johns Hopkins University**
  Instructor   *Fall 2021*
  Developed and taught seminar on the interdisciplinary research area of speech translation,
  with introductions to speech processing, phonetics, and machine translation

- **Machine Translation**   **Johns Hopkins University**
  Course Assistant   *Fall 2021*
  Graded student work

- **Machine Translation**   **Karlsruhe Institute of Technology**
  Course Assistant   *Summer 2018*
  Led Praktikum sessions on machine translation and language modeling

- **Logic and Language Course**   **Dartmouth College**
  Teaching Assistant   *Winter 2012, Spring 2012*
  Tutored undergrads in first-order logic, held tutorials $3\times$ per week, graded student work

Skills

Programming Languages: Python, Scala, Julia, Matlab, HTML/CSS, Javascript

Natural Languages: English (native), Spanish (proficient), German (limited)

Software: LaTeX, PyTorch, Moses, Praat

Service and Professional Activities

Organizing

- **Steering Committee:** IWSLT (2021–present)

- **Workshops:** IWSLT 2024, 2023, 2022, 2021; SIGTYP 2021

- **Evaluation Campaigns:** IWSLT 2024, 2023, 2022, 2021, 2020, 2019; SIGTYP 2021, 2020; SIGMORPHON 2020

- **Tutorials:** End-to-End Speech Translation @ EACL 2021

- **Seminar Series:** NLP with Friends (2020-2021); ISCA SIGSLT Lectures (2022–present)

Reviewing

- **Journals:** Nature; IEEE/ACM Transactions on Audio, Speech, and Language Processing

- **Conferences:** ACL Rolling Review 2023, 2022, 2021; ACL 2023, 2021, 2020[⋆] 2018; AACL 2023, 2022; CoNLL 2023, 2022, 2021, 2020; EMNLP 2023[⋆] 2022, 2021, 2019, 2018; EACL 2023; ICLR 2023; Interspeech 2023, 2022, 2021; ICASSP 2023[⋆] 2022; IWSLT 2023, 2022, 2021, 2020, 2019, 2018; NeurIPS 2023; WMT 2023, 2022, 2021, 2020, 2019, 2018

- **Workshops:** AfricaNLP 2023, 2022; AmericasNLP 2023; ComputEL 2022; Speech for Social Good Workshop 2022; ACL SRW 2022, 2021; SIGTYP 2021, 2020; SIGMORPHON 2020; NLPTEA 2018, 2017; BEA 2017, 2015
    - $\star$ *Outstanding Reviewer*

Volunteering

- NACLO, Skype a Scientist, CMU TechNights, Cambridge Literacy Project, Girls Who Code, Girls Who Build

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Invited Talks

- **Lanfrica**, "Creating Data for Multilingual Speech Translation under Realistic Conditions with Terminology" 10/2023

- **Allen Institute for AI (AI2)**, "Multilingual Language Modelling with Pixels" 08/2023

- **Microsoft Translate**, "Multilingual Language Modelling with Pixels" 08/2023

- **AfricaNLP Workshop**, "Overthrowing Tokenization with Visual Text Representations" 05/2023

- **Microsoft VDI**, "Modelling Language with Pixels" 04/2023

- **Brandeis University**, "Mining, Aligning, and Refining: Extending the Language Coverage of Parallel Speech and Text" 03/2023

- **Apple MT**, "Modelling Language with Pixels" 12/2022

- **Apple Siri NL**, "Modelling Language with Pixels" 08/2022

- **Spectrum Labs**, "Robust Open-Vocabulary Translation from Visual Text Representations" 04/2022

- **IST–Unbabel Seminar**, "Robust Open-Vocabulary Translation from Visual Text Representations" 01/2022

- **Saarland University**, "Looking beyond Unicode for Open-Vocabulary Text Representations" 01/2022

- **SIGTYP Lecture Series**, "Looking beyond Unicode for Open-Vocabulary Text Representations" 12/2021

- **Heidelberg University**, "Source Language Representations for Speech Translation" 05/2021

- **Cambridge University**, "Improving Speech Translation with Linguistically-Informed Representations" 11/2020

- **MIT Lincoln Laboratory**, "Cross-Language Information Retrieval" 11/2015

- **Brigham Young University**, "Natural Language Learning Research and Development" 10/2014

Publications

- **E. Salesky**, N. Verma, P. Koehn, M. Post (2023). "Multilingual Pixel Representations for Translation and Effective Cross-lingual Transfer." *EMNLP*.

- J.F. Lotz, **E. Salesky**, P. Rust, D. Elliott (2023). "Text Rendering Strategies for Pixel Language Models." *EMNLP*.

- **E. Salesky**, K. Darwish, M. Al-Badrashiny, M. Diab, J. Niehues (2023). "Evaluating multilingual speech translation under realistic conditions with re-segmentation and terminology." *IWSLT*.

- W.C. Huang, B. Peloquin, J. Kao, C. Wang, H. Gong, **E. Salesky**, Y. Adi, A. Lee, P.J. Chen (2023). "A Holistic Cascade System, Benchmark, and Human Evaluation Protocol for Expressive Speech-to-Speech Translation." *ICASSP*.

- P. Rust, J.F. Lotz, E. Bugliarello, **E. Salesky**, M. de Lhoneux, D. Elliott (2023). "Language Modelling with Pixels." *ICLR*.

- T. Le Scao **et al** (2022). "BLOOM: A 176B-Parameter Open-Access Multilingual Language Model." *preprint*.

- J. Meyer, D. Adelani, E. Casanova, A. Öktem, D. Whitenack, J. Weber, S.K. Kabenamualu, **E. Salesky**, I. Orife, C. Leong, P. Ogayo, C. Emezue, J. Mukiibi, S. Osei, A. Agbolo, V. Akinode, B. Opoku, O. Samuel, J. Alabi, S.H. Muhammad (2022). "BibleTTS: a large, high-fidelity, multilingual, and uniquely African speech corpus." *Interspeech*.

- K. Batsuren **et al** (2022). "UniMorph 4.0: Universal Morphology." *LREC*.

- S.J. Mielke, Z. Alyafeai, **E. Salesky**, C. Raffel, M. Dey, M. Gallé, A. Raja, C. Si, W.Y. Lee, B. Sagot, S. Tan (2021). "Between words and characters: A Brief History of Open-Vocabulary Modeling and Tokenization in NLP." *preprint*.

- **E. Salesky**, J. Mäder, S. Klinger (2021). "Assessing Evaluation Metrics for Speech-to-Speech Translation." *ASRU*.

- **E. Salesky**, D. Etter, M. Post (2021). "Robust Open-Vocabulary Translation from Visual Text Representations." *EMNLP*.

- T. Pimentel, C. Meister, **E. Salesky**, S. Teufel, D. Blasi, R. Cotterell (2021). "A surprisal–duration trade-off across and within the world's languages." *EMNLP*.

- **E. Salesky**, M. Wiesner, J. Bremerman, R. Cattoni, M. Negri, M. Turchi, D.W. Oard, M. Post (2021). "The Multilingual TEDx Corpus for Speech Recognition and Translation." *Interspeech*.

- N.Q. Pham, T.L. Ha, T.N. Nguyen, T.S. Nguyen, **E. Salesky**, S. Stueker, J. Niehues, A. Waibel (2020). "Relative Positional Encoding for Speech Recognition and Direct Translation." *Interspeech*.

- **E. Salesky**, A.W. Black (2020). "Phone Features Improve Speech Translation." *ACL*.

- **E. Salesky**, E. Chodroff, T. Pimentel, M. Wiesner, R. Cotterell, A.W. Black, J. Eisner (2020). "A Corpus for Large-Scale Phonetic Typology." *ACL*.

- C. Meister, **E. Salesky**, R. Cotterell (2020). "Generalized Entropy Regularization or: There's Nothing Special about Label Smoothing." *ACL*.

- **E. Salesky**, A. Runge, A. Coda, J. Niehues, G. Neubig (2020). "Optimizing Segmentation Granularity for Neural Machine Translation." *Machine Translation*.

- **E. Salesky**, M. Sperber, A.W. Black (2019). "Exploring Phoneme-Level Speech Representations for End-to-End Speech Translation." *ACL*.

- **E. Salesky**, M. Sperber, A. Waibel (2019). "Fluent Translations from Disfluent Speech in End-to-End Speech Translation." *NAACL*.

- **E. Salesky**, S. Burger, J. Niehues, A. Waibel (2018). "Towards Fluent Translations from Disfluent Speech." *SLT*.

- F. Dessloch, T.L. Ha, M. Müller, J. Niehues, T.S. Nguyen, N.Q. Pham, **E. Salesky**, M. Sperber, S. Stüker, T. Zenkel, A. Waibel (2018). "KIT Lecture Translator: Multilingual Speech Translation with One-Shot Learning." *COLING*.

- **E. Salesky**, J. Ray, W. Shen (2016). "Operational Assessment of Keyword Search on Oral History." *LREC*.

- **E. Salesky**, W. Shen (2014). "Exploiting Morphological, Grammatical, and Semantic Correlates for Improved Text Difficulty Assessment." *BEA Workshop @ ACL*.

- W. Shen, J. Williams, T. Marius, **E. Salesky** (2013). "A Language-Independent Approach to Automatic Text Difficulty Assessment for Second-Language Learners." *PITR Workshop @ ACL*.

Shared Tasks

- M. Agarwal, S. Agrawal, A. Anastasopoulos, O. Bojar, C. Borg, M. Carpuat, R. Cattoni, M. Cettolo, M. Chen, W. Chen, K. Choukri, A. Chronopoulou, A. Currey, T. Declerck, Q. Dong, K. Duh, Y. Estève, M. Federico, S. Gahbiche, B. Haddow, B. Hsu, P.M. Htut, H. Inaguma, D. Javorský, J. Judge, Y. Kano, T. Ko, R. Kumar, P. Li, X. Ma, P. Mathur, E. Matusov, P. McNamee, J. McCrae, K. Murray, M. Nădejde, S. Nakamura, M. Negri, H. Nguyen, J. Niehues, X. Niu, A. Ojha, J. Ortega, P. Pal, J. Pino, L. van der Plas, P. Polak, E. Rippeth, **E. Salesky**, J. Shi, M. Sperber, S. Stüker, K. Sudoh, Y. Tang, B. Thompson, K. Tran, M. Turchi, A. Waibel, M. Wang, S. Watanabe, R. Zevallos (2023). "Findings of the IWSLT 2023 Evaluation Campaign." *IWSLT*.

- A. Anastasopoulos, L. Barrault, L. Bentivogli, M. Zanon Boito, O. Bojar, R. Cattoni, A. Currey, G. Dinu, K. Duh, M. Elbayad, C. Emmanuel, Y. Estève, M. Federico, C. Federmann, S. Gahbiche, H. Gong, R. Grundkiewicz, B. Haddow, B. Hsu, D. Javorský, V. Kloudová, S. Lakew, X. Ma, P. Mathur, P. McNamee, K. Murray, N. Nădejde, S. Nakamura, M. Negri, J. Niehues, X. Niu, J. Ortega, J. Pino, **E. Salesky**, J. Shi, M. Sperber, S. Stüker, K. Sudoh, M. Turchi, Y. Virkar, A. Waibel, C. Wang, S. Watanabe (2022). "Findings of the IWSLT 2022 Evaluation Campaign." *IWSLT*.

- A. Anastasopoulos, O. Bojar, J. Bremerman, R. Cattoni, M. Elbayad, M. Federico, X. Ma, S. Nakamura, M. Negri, J. Niehues, J. Pino, **E. Salesky**, S. Stüker, K. Sudoh, M. Turchi, A. Waibel, C. Wang, M. Wiesner (2021). "Findings of the IWSLT 2021 Evaluation Campaign." *IWSLT*.

- **E. Salesky**,* B.M. Abdullah,* S.J. Mielke,* E. Klyachko, O. Serikov, E.M. Ponti, R. Kumar, R. Cotterell, E. Vylomova (2021). "SIGTYP 2021 Shared Task: Robust Spoken Language Identification." *SIGTYP*.

- J. Bjerva, **E. Salesky**, S.J. Mielke, A. Chaudhary, G.G.A. Celano, E.M. Ponti, E. Vylomova, R. Cotterell, I. Augenstein (2020). "SIGTYP 2020 Shared Task: Prediction of Typological Features." *SIGTYP*.

- E. Ansari, N. Bach, O. Bojar, R. Cattoni, F. Dalvi, N. Durrani, M. Federico, C. Federmann, J. Gu, F. Huang, K. Knight, X. Ma, A. Nagesh, M. Negri, J. Niehues, J. Pino, **E. Salesky**, S. Shi, S. Stüker, M. Turchi, A. Waibel, C. Wang (2020). "Findings of the IWSLT 2020 Evaluation Campaign." *IWSLT*.

- E. Vylomova, J. White, **E. Salesky**, S.J. Mielke, S. Wu, E. Ponti, R. Hall Maudslay, R. Zmigrod, J. Valvoda, S. Toldova, F. Tyers, E. Klyachko, I. Yegorov, N. Krizhanovsky, P. Czarnowska, I. Nikkarinen, A. Krizhanovsky, T. Pimentel, L. Torroba Hennigen, C. Kirov, G. Nicolai, A. Williams, A. Anastasopoulos, H. Cruz, E. Chodroff, R. Cotterell, M. Silfverberg, M. Hulden (2020). "SIGMORPHON 2020 Shared Task 0: Typologically Diverse Morphological Inflection." *SIGMORPHON*.

- J. Niehues, R. Cattoni, S. Stüker, M. Negri, M. Turchi, T.L. Ha, **E. Salesky**, R. Sanabria, L. Barrault, L. Specia, M. Federico (2019). "The IWSLT 2019 Evaluation Campaign." *IWSLT*.

- A. Chaudhary, **E. Salesky**, G. Bhat, D. Mortenson, J. Carbonell, Y. Tsvetkov (2019). "CMU-01 at the SIGMORPHON 2019 Shared Task on Crosslinguality and Context in Morphology." *SIGMORPHON*.

- N.Q. Pham, M. Sperber, **E. Salesky**, T.L. Ha, J. Niehues, A. Waibel (2017). "KIT's Multilingual Neural Machine Translation systems for IWSLT 2017." *IWSLT*.

- J. Gwinnup, T. Anderson, G. Erdmann, K. Young, M. Kazi, **E. Salesky** B. Thompson, J. Taylor (2017). "The AFRL-MITLL WMT17 Systems: Old, New, Borrowed, BLEU." *WMT*.

- M. Kazi, **E. Salesky**, B. Thompson, J. Taylor, J. Gwinnup, T. Anderson, G. Erdmann, E. Hansen, B. Ore, K. Young, M. Hutt (2016). "The MITLL-AFRL IWSLT 2016 Systems." *IWSLT*.

- J. Gwinnup, T. Anderson, G. Erdmann, K. Young, M. Kazi, **E. Salesky**, B. Thompson (2016). "The AFRL-MITLL WMT16 News-Translation Task Systems." *WMT*.

- M. Kazi, B. Thompson, **E. Salesky**, T. Anderson, G. Erdmann, E. Hansen, B. Ore, J. Gwinnup, K. Young, M. Hutt, C. May (2015). "The MITLL-AFRL IWSLT 2015 Systems." *IWSLT*.

- J. Gwinnup, T. Anderson, M. Kazi, **E. Salesky**, G. Erdmann, K. Young, B. Thompson, C. May (2015). "The AFRL-MITLL WMT15 System." *WMT*.

- M. Kazi, **E. Salesky**, B. Thompson, J. Ray, M. Coury, W. Shen, T. Anderson, G. Erdmann, J. Gwinnup, K. Young, B. Ore, M. Hutt (2014). "The MIT-LL/AFRL IWSLT-2014 MT system." *IWSLT*.

- M. Kazi, M. Coury, **E. Salesky**, J. Ray, W. Shen, T. Gleason, T. Anderson, G. Erdmann, L. Schwartz, B. Ore, R. Slyh, J. Gwinnup, K. Young, M. Hutt (2013). "The MIT-LL/AFRL IWSLT-2013 MT system." *IWSLT*.

  * indicates equal contribution