Joshua Tanner
NLP Engineer

Experience

NLP Lead — Mantra Inc
Development Team | 2021/12 - Current
- Lead NLP engineering (5 engineers) across multiple projects:
  - Apply LLMs to manga translation, allowing terminology and story aware translation of >30k manga chapters
  - Build multi-step LLM pipeline for novel translation with LangChain to partially automate translation of >150 novels
  - Integrate Mantra's translation technology into multiple multi-billion dollar companies
  - Train multilingual and terminology-aware translation models with Fairseq, improving BLEU on multiple languages by >10
  - Work with professional translators to improve evaluation
- Develop and maintain application backend using Django and AWS
- Rewrite flagship mobile application from scratch in Flutter

NLP Consultant — Multiple Companies
Freelance | 2020/1 - Current
- Lead development of interactive translation system giving users word choices at each decoding step of transformer models
- Implemented optimized character-level transformer architecture in PyTorch and pretrained it with masked langauge modeling, outperforming state-of-the-art in Japanese topic classification [link ↗]
- Rewrote scientific information extraction pipeline using spaCy, increasing micro f1 by more than 20 points

Research Intern — University of Tokyo
Institute of Industrial Science | 2020/12 - 2021/12
- Research into deep learning approaches to retrieval-augmented and explainable grammatical error correction

Software Engineer — eBay
New Product Development & Global Growth | 2016/11 - 2019/9
- Lead development of, tested, and maintained sole ownership of Scala distributed scheduler that powered proactive messaging for eBay's chat bot and Chinese iPhone app
- Research implementing bootstrapping NLP process to extract informative noun/adjective pairs from product reviews was accepted for presentation at eBay's internal research conference (25% acceptance rate)
- Developed Ruby on Rails web service that allowed non-technical staff to write and schedule proactive messages from chat bot to users

Software Engineer — eBay
Global Shipping Program | 2015/9 - 2016/11
- Rearchitected the pipeline used to import shipping charge data from shipping partners, increasing the accuracy of international shipping prices on eBay's search results page by up to 40%
- Maintained and developed new features in Java/Spring services at scale (several million requests per hour), wrote tests using JUnit and Mockito
- Drove an effort to automate excessive manual operations work, saving team tens of hours of work per week

Intern — eBay
Global Data Infrastructure | 2013/6 - 2014/9
- Owned and expanded functionality of Ruby on Rails application automating Hadoop permissions changes and other operational tasks

Research

MWE as WSD: Solving Multiword Expression Identification with Word Sense Disambiguation
J Tanner, J Hoffman
EMNLP Findings+Poster 2023 [link ↗]

Using Long Context for Manga Machine Translation
H Kaino, T Kajiwara, T Ninomiya, J Tanner, S Ishiwatari
Currently in review

GrammarTagger: A Multilingual, Minimally-Supervised Grammar Profiler for Language Education
M Hagiwara, J Tanner, K Sakaguchi
arxiv preprint, 2021 [link ↗]

Education

M.S. Comp. Linguistics
University of Washington / 2021

B.S. Computer Science
The Evergreen State College / 2015

Projects

MWE Dictionary
Personal Project / 2023
Multiword-expression aware dictionary for language learners using models trained with Pytorch Lightning and gRPC for backend

Affiliate Link Generator
eBay Innovation Expo / 2016
Hackathon project converting relevant n-grams into affiliate links featured in internal expo (14% acceptance rate)

Parasite
Personal Project / 2009
Lead development of StarCraft 2 mod reaching two million plays per week

Languages

English — Native
Japanese — Fluent (JLPT N1)