



Anna Liednikova

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RESEARCH INTERESTS

Language	Dialogue systems Retrieval models Ensemble of chatbots Graph-based models Knowledge bases
Cognitive science	Communication models Education models Reinforcement learning
Domain of application	Low-resource setting Healthcare Education Psychology

EDUCATION

- 2019 – 2022 PhD in Informatics**
LORIA / Lorraine University
Supervisors: Professor Claire Gardent, Philippe Jolivet
Topic: Human-Machine Dialog in the Medical Domain. Using Dialog to collect important patient information
Summary: The aim of this PhD topic is to contribute to developing a dialog system that can simulate a physician-patient conversation and collect key medical information from it. It is part of an ongoing project of the ALIAE startup and will benefit from three main assets: an already existing dialog system prototype which is under continuous development by the startup and can be used both to collect dialog data and to evaluate the models developed during the thesis
- 2018 – 2019 Erasmus+ Exchange**
Big Data and Data Science, Ecole Nationale Supérieure des Mines de Nancy
Research Project: Data Expansion for semantic classification
Supervisors: Professor Claire Gardent, Philippe Jolivet
- 2017 – 2019 Master's degree in Data Mining in Project Management**
Institute for applied system analysis, NTU "Igor Sikorsky Kyiv Polytechnic Institute"
Research Project: Project risk analysis using text data mining of comments in project management system JIRA
Supervisors: Professor Petro Bidyuk
Study projects:
- Application of fuzzy C-Means and K-means in the economic and social area
 - Case of IT-project "Developing a Matching System for CRM"
 - Creating a car-tracking model with MongoDB, JS, and Python
 - Business analyst role in developing a mobile application for Vitagramma (personal cabinet for medical laboratory visitors)
- 2013 – 2017 Bachelors's degree in System Analysis**
Institute for applied system analysis, NTU "Igor Sikorsky Kyiv Polytechnic Institute"
Diploma Project: Increasing the efficiency of providing services in the field of medical tourism through web user clustering
Supervisors: Yuriy Timoshenko
Study projects:
- Trajectory Learning method for analysis of RR-intervals dynamics and prediction of arrhythmia
 - Database Management System
 - SWOT analysis of possible development ways of education in Ukraine

PUBLICATIONS

- 2022 • *Exploring the Influence of Dialog Input Format for Unsupervised Clinical Questionnaire Filling*. Farnaz Ghassemi Toudeshki, Anna Liednikova, Philippe Jolivet, Claire Gardent. 13th International Workshop on Health Text Mining and Information Analysis, 2022
- 2021 • *Zero-Shot Clinical Questionnaire Filling From Human-Machine Interactions*. Farnaz Ghassemi Toudeshki, Philippe Jolivet, Alexandre Durand-Salmon, Anna Liednikova. The 3rd Workshop on Machine Reading for Question Answering, 2021
- *Gathering Information and Engaging the User COMBOBOT: A Task-Based, Serendipitous Dialog Model for Patient-Doctor Interactions*. Anna Liednikova, Philippe Jolivet, Alexandre Durand-Salmon, Claire Gardent. 2nd Workshop on NLP for Medical Conversations, 2021
- 2020 • *Learning Health-Bots from Training Data that was Automatically Created using Paraphrase Detection and Expert Knowledge*. Anna Liednikova, Philippe Jolivet, Alexandre Durand-Salmon, Claire Gardent. Proceedings of the International Conference on Computational Linguistics (COLING), 2020
- *Project risk analysis using text data mining of comments in project management system JIRA*. Anna Liednikova, Petro Bidyuk. System Research and Information Technologies, 2020

SUPERVISION

March 2022 - September 2022	Anahita Poulad, Dialogue breakdown detection in chatbot conversation, M2 internship, Master Sciences Cognitives
May 2022 - July 2022	Maxime Saidi, Telegram bot for dialogue annotation, L3 internship, Epitech
May 2021 - September 2021	Luc Brulin, Structuring the database of the conversational AI, M1 internship, Télécom Physique Strasbourg
February 2021 - May 2021	Meziane Bellahmer, Development of french version of ComBot, alternance, Master Sciences Cognitives
March 2021 - July 2021	Abdelhak Zabour, Forecasting user satisfaction using sentiment and emotion analysis, M2 internship, Master Sciences Cognitives
Oct 2020 - Sep 2021	Farnaz Ghassemi, Medical questionnaire filling from dialogue history, alternance, Master Sciences Cognitives
Oct 2020 - Feb 2021	Hadil Chebbi, Target-based sentiment analysis for a medical chatbot, 3A project, Mines Nancy
Oct 2020 - Sep 2020	Farnaz Ghassemi, Medical follow-up bot from forum conversations, M1 internship, Master Sciences Cognitives
March 2020 - Aug 2020	Aidos Sabdenov, Intent classification for medical domain, M2 internship, Master Sciences Cognitives

WORK EXPERIENCE

March 2019 – present

Researcher

ALIAE SAS, Nancy

- design and development of new solutions intended to be implemented in the company
- optimization and updating of the system and the existing solution with the latest scientific advances
- development of evaluation methodologies to ensure the stability and quality of the system
- development of internship topics and student supervision
- developing healthcare chatbot: retrieval and generative models, the ensemble of bots, graph-based dialogue management
- data expansion for semantic classification

April 2018 – July 2018

Data Scientist

Jooble, Kyiv

- multi-language text topic classification;
- pairwise and pointwise ranking;
- click prediction by text and additional data

May 2016 – August 2017

Data Scientist

DataRoot, Kyiv

- NLP text processing analysis/information retrieval tasks/topic modeling
- user behavior path analysis using data mining techniques and graph theory
- taking part in lecture organizing and students supervising

VOLUNTEER

23 November 2022	Forum des Sciences Cognitives, IDMC, Nancy
6 December 2021	"Let the Patient Talk: using dialog to collect important patient information", cafeTAL, Nancy
17 November 2021	Forum des Sciences Cognitives, IDMC, Nancy
6 October 2021	The 6th edition of the Search-Oriented Conversational AI workshop (SCAI 2021), online
9 December 2020	Co-Chair of the "Dialogue and Language Generation" session at COLING
13 November 2019	Forum des Sciences Cognitives, IDMC, Nancy
28 November 2019	IA: TAL Big Data, LORIA, Nancy
31 March 2018	Speaker at Woman Who Code meeting with "Data Mining with Apache Spark", Kyiv
22–24 September 2017	Mentor at Data Scientarium Hackathon, Kyiv
Sep 2016 - Jan 2017	Event organizer and lecturer at AI Booster, Kyiv
25-27 November 2016	Volunteer at KPI Vision Hackathon, Kyiv

SKILLS

Languages	English - B2 French - B1 Russian - Native Ukrainian - Native German - notions Japanese - notions
NLP	pytorch transformers parlai Spacy NLTK gensim
Development	Git Jira Amazon Mechanical Turk Flask HTML MongoDB postgresSQL MySQL Microsoft SQL graphx

ADDITIONAL INFORMATION

Driving licence B

Interests Hiking, Dancing, Plants, Art, Museums, History