Frederik Tollund **Juutilainen**

CREATIVE AND INTERDISCIPLINARY-MINDED SOFTWARE DEVELOPER

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Education

University of Copenhagen
Copenhagen, Denmark

M.Sc. IN IT & COGNITION
Sep. 2017 - Sep. 2019

- IT & Cognition is an interdisciplinary M.Sc. working with machine learning, language, vision and human cognition.
- Completed courses in Scientific programming, Large-scale data analysis, Visualization, Philosophy and Neuroscience, Vision and Image Processing, Introduction to Data Science, Cognitive Science and Language Processing among others.
- My master's thesis focused on using deep learning to create synthetic voices (TTS), where these voices were perceived as belonging to more than one speaker. This was done with a focus on perceived gender in voices and deep neural approaches to novel voice-like audio generation and received highest marks 12 (A).

Roskilde University
Roskilde, Denmark

B.Sc. IN COMPUTER SCIENCE & PHILOSOPHY
Sep. 2013 - June. 2016

- This B.Sc. was completed as a part of the Humanistic Technological bachelor study (HumTek). This programme focuses on the intersection of humanities, technology and design. I here did a combined degree in computer science and philosophy.
- Completed courses including but not limited to Essential Computing (Algorithms and data structures), Interactive Digital Systems, Modelling and Knowledge management, History of Philosophy, Ethics, Metaphysics and epistemology. Additionally I did large project on topics such as reinforcement learning, the qualia of electro-magnetic sensing, parametric architecture and post-phenomenology of digital complexity.
- The bachelor dissertation focused on using evolutionary algorithms in 3D-modelling and design, which received highest marks 12 (A).

Christianshavns Gymnasium
Copenhagen, Denmark

GENERAL UPPER SECONDARY SCHOOL LEAVING CERTIFICATE
Sep. 2008 - June. 2011

- Music, English and Media Studies
- Member of student council

Skills

Humanities	Qualitative methods, gender studies, philosophy of technology, ethics, post-phenomenology
Design skills and competences	Interaction design, HCI, prototyping, design evaluation, cultural probes
Computer skills and competences	Machine Learning, software design and architecture, Linux, Raspberry Pi, Git, Max, Ableton, sound design
Programming	Python (pandas, numpy, scikit-learn), C++ (OpenFrameworks), Java, Javascript, Processing, Arduino
Languages	Danish, English

Experience

Interactive Spaces (The Alexandra Institute)
Copenhagen, Denmark

SOFTWARE DEVELOPER
Nov. 2019 - now

- Software developer in collaborative research project aiming to use Augmented and Mixed Reality solutions in engineering projects and assembly lines.
- Developing physical-digital prototypes for use in urban or cultural settings.

Interactive Spaces Urban Studio (The Alexandra Institute)
Copenhagen, Denmark

SOFTWARE DEVELOPER (PART-TIME)
Sep. 2017 - Sep. 2019

- Worked part-time while studying on my master's.
- In this period our team grew from 3 to 7 people, where I assisted in building this team and the tools that we used.
- Part of developing an online platform for "Lyden Af Struer" (the sound of Struer), which is a portal for recording and documenting physical soundscapes. Created using Javascript and Mapbox.js.
- Part of presenting submissions and facilitating jury meeting for Prix Bloxhub Interactive, which is a collaboration between Ars Electronica, BLOX and Interactive Spaces.
- Sole developer on FORM which was a collaboration with the contemporary art museum Den Frie focusing on online non-linear documentation of art.
- Worked as an external developer for Vertigo, helping developing The Wave, a large-scale audio and light installation, where I developed software for modelling user position and generate POV within the installation. Created in C++ using OpenFrameworks.

Interactive Spaces (The Alexandra Institute)
Copenhagen, Denmark
SOFTWARE DEVELOPER
Aug. 2016 - Sep. 2017
- Software developer on Digital Neighborhoods an interactive installation where citizens in different parts of Århus could record messages for the municipality. This included prototyping software for the first versions and rolling this out on four additional installations.
- Software developer on Tree.0 an experimental light installation, which inquired into how machine learning and real-time data could contribute to changing the ambience in an urban setting through sound and light. Created using C++, Python and Max.
- Continued development on interactive city model, which now incorporated live data and was showcased at Smart City Expo in Barcelona and at "Industriens Hus" in Copenhagen.

Interactive Spaces (The Alexandra Institute)
Copenhagen, Denmark
STUDENT PROGRAMMER
Oct. 2015 - Aug. 2016
- Developed light programming for first iteration of the Digital Neighborhoods installation. This was done in Processing (JAVA).
- Software Developer on large-scale city model using the exhibition "Update" at the Danish Architecture Center. This was a large screen-based floor installation, which was created to show invisible data in urban areas. Users were tracked from above and data was visible underneath them. Created in C++ (OpenFrameworks).

Roskilde University
Roskilde, Denmark
SEMINAR TEACHER
Sep. 2015 - Sep. 2016
- Seminar teacher on the course "Subjectivity, Technology and Society".
- Taught and lead seminars on ethics of technology, the field of STS, problem-oriented project work and introductions to theory of science.

Informi GIS
Charlottenlund, Denmark
TRANSLATOR
Sep. 2009 - Dec. 2016
- Student job that consisted of translating workshop material from English to Danish. Required basic knowledge of GIS.

Extracurricular Activity

Group Therapy I/S
Copenhagen
CO-HOST AND RESIDENT DJ
Oct. 2018 (ongoing)
- Along with three good friends I started and own the company Group Therapy, which hosts a string of parties in Copenhagen focusing on community and diversity in night-life.

Multivocal
Varying
MEMBER
May. 2017 (ongoing)
- I am a member of Multivocal, which is an art- and research-project exploring the aesthetics and politics of synthetic voices.

Signal and Noise - MIT Media Lab Berlin
Berlin, Germany
PARTICIPANT
Aug. 2018
- Signal & Noise was a one-week workshop in Berlin hosted by MIT's Media Lab. This was a internationally minded workshop with different tracks, where I partook in the track called "Machine Learning for Creative AI".
- We here created an installation, where the behavior of a reinforcement learning agent changed when it was under a human gaze.

Roskilde Festival
Roskilde, Denmark
PART OF CREATING VISUALS FOR GLORIA
Jul. 2018
- Through my relationship with stage design wizards Vertigo, I was a part of the team creating the visuals for the Gloria stage at Roskilde Festival. This mainly consisted of creating controller tools for other designers and visual artists.

Anyines
Copenhagen, Denmark
GRAPHIC AND WEB DESIGN
_2017_
- Anyines is a new Danish music label for electronic music. I created an online visual identity for their first two releases by An Gella and Minais B. The former consisted of creating a 3D-model from a CT scan, which users can explore through a custom-made web interface. Created using p5.js, three.js and Javascript.

HumTek - Roskilde University
Roskilde, Denmark
MENTOR
Sep. 2015 - Jan. 2016
- I was a mentor for new students at HumTek at Roskilde University. This mentoring was in relation to study techniques, project work and general university life.

Sprout Talent Week 2016
Copenhagen, Denmark
PARTICIPANT
Jul. 2016
- I partook in the workshop Sprout Talent Week, where I, as a part of an inter-disciplinary team, created a prototype for an installation designed to use VR to see unexplored parts of the city.

Presentation

Catch Summer Camp
Elsinore, Denmark

PRESENTING THE TALK "THE STRUGGLES (AND SUCCESSES) OF CREATING A NON-BINARY SYNTHETIC VOICE"
Aug. 2019

- At the Catch Summer Camp 2019, which is a summer camp for master students, PhD-students and artists. We here presented the Multivocal project including findings from my master thesis.

Danish Radio P1
Denmark

NON-BINARY SYNTHETIC VOICES
Sep. 2018

- Interview about collaborative approaches to creating synthetic voices which do not fit within a binary understanding of gender. This was in the programme "Kulturen på P1".

Den Frie (Museum for Contemporary Art)
Copenhagen, Denmark

TALK AT THE SEMINAR "ONLINE FORM: DOCUMENTING ART IN THE DIGITAL AGE"
Feb. 2018

- Presentation of the FORM project, which I worked on with the Interactive Spaces Lab.

Driving IT at IDA, The Danish Society of Engineers
Copenhagen, Denmark

PRESENTING THE MULTIVOCAL PROJECT
Sep. 2017

- Presentation of synthetic voices and different approaches to creating collaborative synthetic voices. It was here focused on an engineering crowd and a related podcast interview was created for the IDA podcast called Techtopia.

Rhythmic Music Conservatory
Copenhagen, Denmark

CREATIVE APPLICATIONS OF MACHINE LEARNING IN MUSIC AND INTERACTION
Sep. 2017

- Presentation for students of composition and song-writing on using machine learning in audio generation, composition and novel musical interactions.

Danish Radio P3
Denmark

SENSING USING MAGNETIC IMPLANTS
May. 2016

- Interview on personal experiences with magnetic sensing using a magnetic implant in my left hand.

Pecha Kucha Night CPH #30
Copenhagen, Denmark

PRESENTING THE TALK "MY MAGNETIC IMPLANT"
Nov. 2014

- "Pecha Kucha"-style presentation my experiments with having magnetic finger implants and using these to sense magnetic fields.

Writing

[multi'vocal]: Reflections on Engaging Everyday People in the Development of a Collective Non-Binary Synthesized Voice
EVA Copenhagen 2018 - Politics of the Machines

CO-AUTHOR
May. 2018

- Research paper describing the Multivocal project. Was published in EVAC 2018.