Abduragim Shtanchaev

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Education

- **Skoltech** — **Moscow**, RU
  M.Sc. in Information Systems and Technology, GPA: 3.95/4.00 — *Sept 2018 - May 2020*
- **University of Turkish Aeronautical Association** — **Ankara**, Turkey
  B.Sc. in Mechatronics Engineering, GPA: 3.35/4.00 — *Sept 2013 - July 2018*

Work & Research Experience

- **O.Vision** — **Saint Petersburg**, RU
  Research Data Scientist — *January 2021 - Present*
  - **Face Recognition Validation Protocols**: Created face recognition validation protocols considering rejections by IQA model. Protocols validate efficiency IQA/RUE models.
  - **Recognition Uncertainty Estimation** : Research on recognition uncertainty estimation methods for enrollment and passes. Improved Acc@ZeroFP up to 2% at rejection rate 20%.
  - **Detection**: Developed multi-domain fast face detection models based on FaceNet architecture. Performed int8 quantization for model deployment on edge devices using TensorTR. Helped converting the model to C++ for production deployment
  - **Image Quality Assessment**: Developed image quality assessment models for face recognition enrollment image quality control
  - **Model Deployment & Maintanance**: Converted all developed models to TensorRT for speed up on NVIDIA Jetson Nano. Created libraries using TensortRT/Pytorch frameworks to install the models with pip
- **NeurodataLab LLC** — **Moscow**, RU
  Research Data Scientist — *April 2020 - September 2020*
  - **Ad Power**: Developed predictive models for ad recall predictions based on the emotional state of subjects, ad's media coverage, and ad intrinsic information.
  - **Data Collection & Prepossessing**: Developed data prepossessing pipelines for ad recall prediction model from a scratch
  - **Paper**: Co-authored a paper on ad recall prediction
- **German Orbital Systems** — **Berlin**, GE
  Research Intern — *Summer 2019*
  - **ADCS**: Developed testbed for Attitude Determination and Control System for small cubesats satellites. The control system enables small satellites to control attitude and tilt using only magnetorquer. For more details
- **Skoltech** — **Moscow**, RU
  A list of valuable projects accomplished as an M.Sc. student — *2018 - 2020*
  - **Iris Flower Classifier Deployment**: Created a web service for Iris Flower classifier using Flask and Docker. Deployed on AWS. Code
  - **Non classical Optimizers for GANs**: GANs are known as "difficult to train" for various stability reasons. We researched non-classical optimizers of non-convex functions to measure their effect on training stability. Implemented and tested non-classical optimizers such as Gradient Sliding, Ellipsoid, and Quick prop on GANs using Pytorch. Code and presentation
  - **Camera Trajectory Estimation**: Implemented a model for estimating the trajectory of a framing camera using RGB-D images and classical computer vision techniques. Wrote a blog on medium about the project. Source code

- **Recybot**: A project in collaboration with the Department of Mechanical Engineering at MIT under Prof. Kamal Youcef-Toumi and Skoltech Robotics lab. Built screw detection model for automated e-waste disassembly. More about project here

- **University of Turkish Aeronautical Association** **Ankara**, TU
  A list of valuable projects accomplished as a B.Sc. student *2014 - 2018*
  - **Sumo Robot**: Developed software for a Sumo Robot on micro-controller. Participate in a competition.
  - **CNC 3D Printer**: Developed software for a CNC 3D printing machine
  - **Drone Controller**: Developed mathematical model for controlling position, velocity and acceleration of a drone. Tested the algorithm in a simulation

Thesis Projects

- **Automated Forest Inventory Using Satellite Images**
  M.Sc. Thesis advised by Prof. Anton Ivanov
  - **Python**: Developed a semi-supervised approach for tree crown classification in boreal forest using World-View2 satellite imagery with a low spatial resolution - 0.5m/pix. Paper published at IAC conference. The full thesis and code

- **Pipeline Inspection Robot - PIG**
  B.Sc. Thesis advised by Prof. Habib Ghanbarpourasl
  - **C++**: Odometery calculation in wheel slippage. Developed and tested an algorithm for a robot odometry measurement using camera assistance in the cases when wheel slippage is present.

Publications

2021	**A Recipe to Train Object Detection Models**
2020	**Multimodal Ad Recall Prediction Based on Viewer's and Ad Features**
2020	**Automated Remote Sensing Forest Inventory Using Satellite Imagery**
2019	**Camera Trajectory Estimation**

Achievements

2020	**Competed SMILES**, selected 10% applicants. Certificate
	Graduated with High Honors from Skoltech
2018	**Prestigious Full Scholarship** at Skoltech for M.Sc, selected from 3k+ (<1 %)
	Graduated with Honors from UTAA
2013	**Full Scholarship** for B.Sc. at UTAA
	Graduated with High Honors from Liceum
2011	**Ranked 4th** in Russian Regional History Olympiad

Tools

Strong	♥ **Python** ∘ ♥ **Vim** ∘ ♥ **Pytorch** ∘ bash/zsh/tmux ∘ git
Normal	Java ∘ **C++** ∘ SQL ∘ OpenCV ∘ **Language is not problem after all :)**
Familiar	TensorFlow ∘**Keras** ∘ mxnet ∘ HTML ∘ C ∘ Jekyll ∘ Docker ∘ Flask ∘ TVM

Skills & Interest

Strong	♥ **Computer Vision** ∘ ♥ **Graph Neural Networks** ∘ ♥ **Math & Statistics**
Normal	♥ **Bayesian Inference** ∘ Algorithms and Data Structures
Familiar	**Quantum Computing** ∘ Neuroscience ∘ NLP