NIHAT ISIK

Computer Science

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EDUCATION / COURSES

Master in Computer Science
ETH Zürich - Computer Vision & Graphics

Sep 2018 – In Progress

Bachelor in Computer Science
ETH Zürich

Sep 2015 – Aug 2018

Game Laboratory
ETH Zürich

Feb 2019 – June 2019

EXPERIENCE

Disney Research Internship
Disney Reasearch Studios

Oct 2019 – Jan 2020 Zürich, Switzerland

- Work in a research team up to 4 people.
- Research 3D pose estimation from a single RGB camera using machine learning frameworks in python (e.g. pyTorch).
- Implement optimizer that uses 2D predictions to get better 3D estimation. Update estimate using Gauss-Seidel.

Bachelor Thesis
ETH Zürich

Mar 2018 – Sep 2018 Zürich, Switzerland

- Tested UnityRL and trained different environments to test the most effective description for the agents in a Reinforcement Learning setting.
- Trained a virtual car to park.

Software Engineer - Personal
Kneehat Games

Apr 2018 – Present Zürich, Switzerland

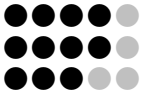
- Developed a game from scratch using Unity Game Engine and published on Google Game Play and App Store (Space Color Bird).
- Currently working on other games personally.

ACHIEVEMENTS

- Placed 2 in Game Laboratory (1 Semester ETH Master Course where the goal is to create a game using Monogame)

SKILLS

C++, C#, Python, Java, Keras, Unix
Unity Game Engine, Photoshop
Tensorflow, SQL



PROJECTS

Physically based simulation: rigid and soft body simulation library.

- Project for PBS master course at ETH.
- Library that consists of a position based dynamics system with a Verlet integration scheme. All objects are represented by particles and constraints.
- Solving for the constraints is done iteratively in a Gauss-Seidel fashion.
- Lightweight and supports cloth system, dynamic elastic mesh deformation and elastic rig.

Build a Game in a Team

- Team of 6 people, 3 artist and 3 programmers.
- Built a game using Monogame, integrating different framworks and the assets from the artists.
- Used a similar approach to Scram.

Build a Ray Tracer

- Using Nori, c++ framework, we constructed a renderer implementing Path Tracing.
- Photon Mapping.
- Other rendering features.

Semantic Road Segmentation

- From 100 labeled satellite images we trained a network to learn to detect roads pixelwise.
- Written mostly in Keras.

Dynamic Gesture Recognition

- From a set of gesture videos taken from the ChaLearn dataset train a network to classify between 20 different gestures.
- Written mostly in Tensorflow.

Fast CPU RayMarcher

- Team: 4 people.
- Built ray marcher infrastructure in c++.
- Scalar optimization (code motion, strength reduction, loop unrolling, etc.)
- Vectorized pipeline using Intel Intrinsics (SIMD).

Personal Project: Space Color Bird

- Self made game for Android and iOS.
- Programming in C#.
- Most of design done by myself in Photoshop.
- Effects and Ranking integration using a framework.
- More info: kneehatgames.ch

LANGUAGES

English, Italian, German, Kurdish
Turkish