

Yanick Christian TCHENKO

Study program: Applied Informatics |
Software & Network Engineering (M.Sc.)
Second degree program: Technomathematics (B. Sc)
at the University of Duisburg-Essen.

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📍 Essen, Germany

📅 Born on 07 February 1996 in Cameroon

🌐  LinkedIn

In addition to my previous studies in "Applied Computer Science - Software and Network Engineering (M. Sc.)" and my Bachelor's degree in Mechatronics, I have gained some practical experience so far through my various activities in software development. I envision my professional future mainly in managing and developing data-driven software systems, e.g., with the help of machine/Deep learning. Therefore, I am improving my mathematical knowledge before entering the profession, as mathematical solution approaches for learning-based software systems are becoming increasingly critical.





EDUCATION

2023 -	France, University of Paris Saclay (Computer Science Ph.D.)
2021 -	Germany, University of Duisburg-Essen, Germany (Mathematics B.Sc.)
2020 - 2022	Germany, University of Duisburg-Essen (Computer Science M.Sc.)
2016 - 2020	Germany, Hamm-Lippstadt University of Applied Sciences (Mechatronics B. Ing)
2014 - 2016	Cameroon, Goethe Institute (German language)
2008 - 2014	Cameroon, Lycée Bilingue de New-Bell (high school)

SKILLS

Programming	Python, C/C++, C#, SQL/PL SQL, MATLAB/Simulink, Solidworks, Solver GPLK
EDP skills	Microsoft Office programs
Electrical Engineering Programs	Ultiboard, Multisim, Spice, Fitting, Eagle
Development Environments	Eclipse, VS Code, SVN, Gitlab, Github, pycharm, etc.
OS	Windows Server, Windows 7 - 11, Linux-ubuntu, XFCE
Other	Technologies RFID, Radar

PRACTICAL EXPERIENCES

Present March 2023	PHD Student,  UNIVERSITY PARIS SACLAY - IBISC, France <ul style="list-style-type: none">> Computer Vision - Omnidirectional 3D reconstruction using Deep Learning> Image correspondence & Matching - Optical/Scene Flow> Image Orientation & Dense Matching> Image Scene Reconstruction <div>CUDA Python Pytorch Machine learning Deep Learning NERF</div>
Present March 2023	Teaching Assistant,  UNIVERSITY PARIS SACLAY, France <ul style="list-style-type: none">> Data Science> Machine Learning> Computer Vision <div>CUDA Python Pytorch Machine learning Deep Learning</div>
Present June 2023	Software Developer,  FORVIA, France <ul style="list-style-type: none">> (Predictive) Data Analytics> Machine Learning and Gen AI (Elastic Search, LLMs)> Artificial Intelligence for BI <div>CUDA Python GPT-4 Elastic Stack Qlik Auto Machine Learning Qlik Sense Orchestra Palantir (PL) SQL</div>
March 2023 January 2020	Software developer and Mathematician,  GRIPS INDUSTRIAL IT SOLUTIONS GMBH, Germany <ul style="list-style-type: none">> GLPK, SQL, SSRS, ProcessView> Reports> Linear Programming (LP)> Data visualization for Steel-industry <div>c# VBA GLPK Qt-Designer SQL python pyTorch c/c++ HTML5 Report Builder R SSRS</div>

March 2021 November 2020	Research Assistant ProDaZ, UNIVERSITÄT DUISBURG ESSEN , Germany <ul style="list-style-type: none"> > Server programming > Website programming <div>phphtmljavascript</div>
march 2020 February 2019	Bachelor thesis and working student, research and development, ASO GMBH , Germany <ul style="list-style-type: none"> > Selection of a radar-based obstacle detection methodology, optimizing and implementing it for airport vehicle bumpers. > Modeling of radar pattern for display and 3D environment as well as GUI production > MATLAB-C code generation and integration with radar front-end > Code extension in Visual Studio (C/C++) > Radar signal processing <div>MATLABSimulinkc#c++</div>
October 2018 February 2018	project work & Internship, research and development, AEG POWER SOLUTIONS GMBH , Germany <ul style="list-style-type: none"> > "Setup and commissioning of an analog interface between STM32 microcontroller and PC via MOD-BUS" > Microcontroller programming (Eclipse, Cortex 7-STM32) <div>MODBUSUDPTCPTueStudioc#c/c++</div>
February 2018 October 2017	Tutor in Mathematics 1 and Physics, HAMM-LIPPSTADT UNIVERSITY OF APPLIED SCIENCES , Germany <ul style="list-style-type: none"> > Follow-up of exercises with students of mechatronics > Participation in pre-course lectures
September 2017 August 2017	Tutor in math pre-courses, HAMM-LIPPSTADT UNIVERSITY OF APPLIED SCIENCES , Germany <ul style="list-style-type: none"> > Working on the exercise problems with future students in courses of mechatronics, industrial engineering. > Participation in pre-course lectures

LANGUAGES

German	●●●●●
French	●●●●●
English	●●●●○

STRENGTH

- > passionate
- > motivated
- > determined
- > independent

DEGREES

2026	executive: Ph.D. in Applied Computer Science
2024	executive: Bachelor of Science in technomatematics
2023	Master of Science in Applied Computer Science
2020	Bachelor of Engineering in Mechatronics
2016	German language examination for university entrance at Leibniz University of Hannover
2014	General university entrance qualification with advanced courses in mathematics and physics

PROJECTS

3D RECONSTRUCTION IN THE FIELD OF OMNIDIRECTIONAL VISION

MARCH 2023 - FEBRUARY 2026

Goal: This project aims to propose a novel Framework for Scene reconstruction using Deep Learning approaches. The system should be able to infer the geometry of the full 360 degrees of the scene based on spherical(omnidirectional) images.
Key words: Deep Learning, spherical images, 3D-reconstruction, Instance segmentation, Computer Vision, Object detection, Augmented Reality, Virtual Reality

CUDA Python PyTorch OpenCV TensorboardX Tensorflow C/C++

MASTER'S THESIS: COMPRESSION OF DNN-BASED OBJECT DETECTORS (YOLO-V4) USING KNOWLEDGE DISTILLATION (KD) JUNE 2022 - MARCH 2023

Goal: This project aims to develop new KD approaches to compress the very large DNN models (teacher) into small DNN models (student), which can be deployed internally on edge devices in the industrial field. It is expected to deal with the issue of accuracy loss when compressing DNN models. We apply response-based (RsKD), feature-based (FKD), and relation-based (RKD) as well as multi-type Knowledge distillation (MKD) on the YOLO-V4 Object detector and show that using especially the RKD, we can compress DNN models and simultaneously conserve and even improve the inference time as well as the accuracy.

Key words: Deep Learning, YOLO-V4, YOLO-V3, Faster RCNN, Knowledge Distillation, Computer Vision, Object detection

python PyTorch ONNX OpenCV TensorboardX CUDA C/C++

ENHANCED HEALTH INTELLIGENCE FOR PERSONAL BEHAVIORAL STRATEGIES IN EVERYDAY LIFE OCTOBER 2021 - MARCH 2022

 Eghi

Goal: The aim of the project is to develop an AI-based learning assistance system that supports healthy everyday behavior.

Main Activity: Mobile Augmented Reality, Mixed Reality, location based AR

ARCore Android Java Dart

VISUALLY CONNECTING HISTORICAL FIGURES THROUGH EVENT KNOWLEDGE GRAPHS OCTOBER 2020 - APRIL 2021

 VisKonnnect

Goal: Human-Computer Interaction: Knowledge graphs store information about historical figures and their relationships indirectly through shared events.

Main Activity: Knowledge and Maps graphs store information about historical figures

Angular Elasticsearch GPT-3 D3

PROJECT CAROLO CUP, STUDENT COMPETITION ON THE TOPIC "AUTONOMOUS DRIVING" MARCH 2017 - MARCH 2020

 Carolo Cup

Goal: Object recognition and tracking, Signal and image processing

Main activities: Information technology and electrical engineering (image processing, model building, longitudinal and lateral control), Leadership and project management, IT (subversion)

svn MATLAB Visual Studio Code Python

INTEREST & PUBLICATIONS

Playing soccer and basketball, reading, research

DRAFT - DISTILLED RECURRENT ALL-PAIRS FIELD TRANSFORMS FOR OPTICAL FLOW SUBMITTED - FEBRUARY 2024

 ICIP 2024

Abstract: This paper addresses challenges in deploying learning-based 3D scene reconstruction on resource-constrained devices. We introduce DRAFT, a method to compress large deep learning models used in reconstruction workflows, utilizing knowledge distillation adapted for optical flow tasks. Distillation components based on sign-pattern matrices and inertia enhance the KD process. Empirical validation on KITTI and Sintel datasets shows DRAFT consistently outperforms RAFT, FlowID, GMFlow, and Anyflow while significantly reducing model size. DRAFT enhances the feasibility of deploying learning-based 3D reconstruction on edge systems, contributing to resource-efficient methodologies for optical flow and stereo matching.

Key Words: Computer Vision, Optical Flow, 3D reconstruction, Deep Learning, Transformers, Knowledge Distillation

CUDA Python PyTorch OpenCV TensorboardX Tensorflow C/C++

VISKONNECT - VISUALLY CONNECTING HISTORICAL FIGURES THROUGH EVENT KNOWLEDGE GRAPHS ACCEPTED - 2021

 EEE VIS 2021

Abstract: Knowledge graphs store information about historical figures and their relationships indirectly through shared events. We developed a visualization system, VisKonnnect, for analyzing the intertwined lives of historical figures based on the events they participated in. A user's query is parsed for identifying named entities, and related data is retrieved from an event knowledge graph. While a short textual answer to the query is generated using the GPT-3 language model, various linked visualizations provide context, display additional information related to the query, and allow exploration.

Key Words: Computer Vision, Data visualization, Historical Figures, Event Knowledge Graphs

CUDA Python PyTorch OpenCV TensorboardX Tensorflow C/C++

“ REFERENCES

Prof. Dr.-Ing. Amr Rizk: Supervisor - Master Thesis

Prof. Computer Science, UNIVERSITY OF DUISBURG-ESSEN

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Prof. Dr. Kai Gehrs: Supervisor - Bachelor program

mathematics, UNIVERSITY OF SCIENCES HAMM-LIPPSTADT

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Prof. Dr. Hedi Tabia: Supervisor - PHD Thesis

Prof. Computer Science, UNIVERSITY OF PARIS SACLAY

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Dr.-Ing. Thorsten Vogt; : Supervisor - Bachelor program

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Dr. Shahid Latif : Project Supervisor - Master program

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