

# Anil U. Batmaz

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## Skill Summary

**Software:** Python, Matlab, C#

**Data analysis:** SPSS, Python, PowerBI, Tableau, JMP

**Tools:** Visual studio, Unity

**Methodologies:** Agile, scrum and waterfall

**Algorithm Development:** 3D Math, physical-mathematical modelling, system modelling, data filtering

**Leadership:** Team lead, mentoring and supervising

**Communication:** Research papers and academic talks

## Work Experience

**Postdoctoral fellow**, *VVISE lab at Simon Fraser University Vancouver BC, Canada* (2018 - Present)

Human-Computer Interaction research lab, supervising eight graduate students and co-authored twelve academic publications.

- Data analysis and assessment with univariate and multivariate General Linear Models including ANOVA and ART.
- Developed a dashboard using PowerBI and Python, to analyze and monitor surgeon's workload at Fraser Health.
- Design and implement a real-time 3D visualization of COVID-19 data to help the public consume and understand trends.
- Using Python on Raspberry Pi3, designed a semi-autonomous speed controller algorithm to improve user experience.
- For Boeing's maintenance monitoring application, designed an interaction algorithm in C# to enhance user experience.
- Industry collaboration with Stambol Inc. to develop a VR and AR platform enabling both remote training and telemedicine.
- Collaborated with NRC, developed algorithms to improve the user experience of aircraft motor technician training.
- Used machine learning to auto select object interaction methods in VR based on context and actions.
- Volunteer: Poster chair of ACM VRST 2020, Program Committee Member of IEEE VR 2019-2021 and ACM VRST 2020 conferences. Co-guest editor of the special edition of Frontiers Journal on multi-modal interaction.
- Mentored students in Python, data analytics, and visualization for VVISE lab students.

**Team Lead, Software Engineer**, *GFDS 3D Animation and Software Inc., Ankara, Turkey* (2013 - 2015)

Managed a team of six developing Mobile AR sales applications and other visual software solutions C# for diverse industries including pharmaceutical, car battery manufacturer, construction and architecture and many others

- Collaborated with customers to design platform and software specifications to meet their needs and constraints.
- Managed projects using Trello and Agile software methodology, controlled quality with unit testing and regular code reviews.
- Lead the team to develop a multi-user Boeing simulator for cooperative pilot education and training over network.
- Created a zSpace medical training and diagnosis application in Python, VTK and OpenGL to explore patient scans in 3D.
- Developed the software and hardware of a glove to interact with objects in VR, used in a variety of commercial applications.

## Education

**Ph.D. Biomedical Engineering**, *University of Strasbourg, France* (2015 - 2018)

Ph.D. award, IDEX: One of the most prestigious Ph.D. scholarship awards in French Higher Education. Co-authored eight articles.

- Performed statistical analysis in Python to guide the development of an adaptive feedback medical training system which improved training speed by 30%.
- Designed and built a monitoring system that provided feedback to improve surgeons' experience using a STRAS surgical robot.
- Conducted user studies and published a list of recommendations for software developers of medical VR/AR applications.
- Invited speaker: "Virtual Reality in Surgery", Pint of Science, Strasbourg, France, 2017. "Virtual Reality challenged by image-guided surgery", Paris, France, 2017. "Inside the virtual brain: using OCULUS DK2 for surgical planning", NeuroTalk, Barcelona, Spain, 2007.

**MSc Electrical Engineering**, *TOBB University of Economics and Technology, Turkey* (2011 - 2013)

- Developed a mathematical model to theoretically increase the lifetime of wireless sensor networks up to 90%.
- Designed and built a hobbyist drone, optimized controller coefficients in MATLAB to improve stability.

**Bachelor Electrical Engineering**, *TOBB University of Economics and Technology, Turkey* (2007 - 2011)

- Graduated with distinction, designed a novel multi-rotor unmanned aircraft including the flight algorithm.

**About me:** *Additional Languages:* French and Turkish; *Hobbies:* Hiking, kayaking, skiing, swimming, and video games