

Curriculum Vitae

I. Personal Details

Name: Fabian Buchmayer
Date of Birth: 16.05.1991
Country of Birth: Austria
Nationality: Austria

II. Education

2015-2018 **Master in Geomatics Science**
Graz University of Technology, Austria
Thesis Title: Automated monitoring based on available fibre-
optical communication cables
Degree with *First Class Honours*

2015 **University of Calgary**
Alberta, Canada
Student Exchange within Joint Study program

2011-2015 **Bachelor in Geomatics Engineering**
Graz University of Technology, Austria

III. Work Experience

Since 04/2021 **Managing Director and Co-Founder**
ACI Monitoring GmbH, Graz, Austria

Projects:

- Gschnitztalbrücke A13 (AUT); 400 m DFOS cables and 10 tilt sensors
- Laxenburgerbrücke A23 (AUT); 220 m DFOS cables
- Streettunnel S7 Rudersdorf (AUT); 10 DFOS cross sections (inner lining)
- Semmering Base Tunnel (AUT); 5 DFOS cross sections (inner lining)
- Brenner Base Tunnel (AUT); 2 DFOS cross sections (pre-cast tunnel lining segments)
- Foundation of cable car pillar Kieserl 10EUB (AUT); 1300 m DFOS cables
- HS2 Railway (UK); DFOS subsidence monitoring

02/2018 – 03/2022 **University Project Assistant**; Institute of Engineering Geodesy and Measurement Systems (Prof. Werner Lienhart), Graz University of Technology, Austria
Research Focus: Distributed fibre optic sensing, especially in tunnelling (knowledge of whole work cycle: concept – implementation – data acquisition – data analysis)

Projects:

- DB railway S21 main station; 30 DFOS loops (bridge monitoring)
- Streettunnel S7 Rudersdorf; 1,5 km DFOS cables (Cross sections and longitudinal)
- Koralmtunnel; DFOS cross section inside tunnel segments (TBM)
- Zentrum am Berg (tunnel research centre); DFOS cross section (outer lining)
- Semmering Base Tunnel; Göstritz, 5 DFOS cross sections in two shafts (outer lining)
- Tunnelkette Granitztal; 5 DFOS cross sections (inner lining)
- Semmering Base Tunnel; Gloggnitz, Tube 2, DFOS cross section (outer lining)

2011 – 2017 **Part-time employee**, IT Services, Communications and Marketing, Research & Technology House, AlumniTUGraz 1887; Graz University of Technology, Austria

2015 – 2017 **Part-time employee**, geotechnical monitoring in tunnelling; VSP (Surveying company), Vienna, Austria

2015 – 2017 **Student Research Assistant**; Institute of Engineering Geodesy and Measurement Systems (Prof. Werner Lienhart), Graz University of Technology, Austria

10/2014 – 12/2014 **Surveying Engineer**, technical surveying; ADP Rinner (Surveying company), Graz, Austria

07/2014 – 08/2014 **Surveying Engineer**, technical surveying; ABG Vermessung (Surveying company), Klagenfurt, Austria

07/2013 – 08/2013 **Surveying Engineer**, border reconstruction; Austrian Federal Forestry, Salzburg, Austria

IV. Publications

[P9] C.M. Monsberger, P. Bauer, **F. Buchmayer**, W. Lienhart (2021) *Large-scale distributed fiber optic sensing network for short and long-term integrity monitoring of tunnel linings*. Journal of Civil Structural Health Monitoring; doi: 10.1007/s13349-022-00560-w

[P8] C.M. Monsberger, **F. Buchmayer**, W. Lienhart (2021) *Autonomous Integrity Monitoring of Shotcrete Tunnel Linings using Distributed Fiber Optic Sensing*. Proc. 10th International Conference on Structural Health Monitoring of Intelligent Infrastructure - SHMII-10, Porto, Portugal (Online Event): 7p

[P7] **F. Buchmayer**, C.M. Monsberger, W. Lienhart (2021) *Distributed fibre optic sensing for long-term monitoring of tunnel inner linings in anhydrite*. 8th Civil Structural Health Monitoring Workshop (CSHM-8), Naples, Italy (Online-Event): 13p

- [P6] W. Lienhart, C.M. Monsberger, **F. Buchmayer** (2021) *Verteilte faseroptische Sensorik zur Detektion, Lokalisation, Identifikation und Quantifikation von Deformationsereignissen*. Allgemeine Vermessungs-Nachrichten 128 (5): 248-255
- [P5] **F. Buchmayer**, C. Monsberger, W. Lienhart (2021) Advantages of tunnel monitoring using distributed fibre optic sensing. In: Journal of Applied Geodesy, De Gruyter
- [P4] W. Lienhart, **F. Buchmayer**, F. Klug, C. Monsberger (2020) *Distributed fibre-optic sensing applications at the Semmering Base Tunnel, Austria*. In: Proceedings of the Institution of Civil Engineers - Smart Infrastructure and Construction 172, No. 4
- [P3] **F. Buchmayer**, C. Monsberger, W. Lienhart (2019) Benefits of strain and temperature monitoring of conventional tunnel cross sections using distributed fibre optic sensors. Proc. 4th Joint International Symposium on Deformation Monitoring (JISDM), Athen, Greek: 7 p
- [P2] W. Lienhart, **F. Buchmayer**, F. Klug, C. Monsberger (2019) *Distributed Fibre Optic Sensing on a Large Tunnel Constructions Site: Increased Safety, More Efficient Construction and Basis for Condition-Based Maintenance*. Proc. International Conference on Smart Infrastructure and Construction (ICSIC), Cambridge, England: 10 p
- [P1] R. Henzinger, T. Schachinger, W. Lienhart, **F. Buchmayer**, W. Weilingner, R. Stefaner, M. Haberler-Weber, E.-M. Haller, M. Steiner, W. Schubert (2018) *Fibre-optic supported measurement methods for monitoring rock pressure*. In: Geomechanics and Tunnelling 11, No. 3: 251–263

V. Awards

- 2019 **Best Paper Award** at the International Conference on Smart Infrastructure and Construction, (ICSIC), Cambridge, UK for the article *Distributed Fibre Optic Sensing on a Large Tunnel Constructions Site: Increased Safety, More Efficient Construction and Basis for Condition-Based Maintenance*.

Date: August 2023