

March 30<sup>th</sup> 2021

Regarding: Frederick Lüthcke

To whom it may concern,

I had the pleasure of being Frederick's Mentor at IABG from August 2018 until March 2021. As his Mentor I had the opportunity to guide Frederick through his journey at IABG by supporting him with any questions or concerns he may have had regarding work or personal matters. Additionally, I had the opportunity to work with Frederick on a number of projects. As a result, I've gotten to know Frederick quite well, both professionally and personally.

Frederick's journey at IABG is marked by an excellent quality of work, a goal oriented high performing drive and a remarkable honesty and integrity. These qualities are the main contributors to his success at IABG, where he advanced his responsibilities from creating and evaluating 6 DOF models of various effectors to leading customer oriented work packages and projects in our naval domain.

Frederick has repeatedly delivered an excellent standard of quality in his work. Often facing tight deadlines and pressure from high workloads due to the fast paced work environment of our engineering project work. Frederick has always acted decisively and deliberately to prioritize and execute his duties and to deliver the outstanding quality of his technical and managerial work in a clear, well organized and understandable fashion. His ability to make decisions under pressure and communicate these clearly to colleagues, customers and external partners is an asset that makes Frederick a valuable employee and project leader.

Frederick has demonstrated a goal oriented high performing drive, both inside and out of the workplace. As a high performing athlete Frederick has achieved national selection in two team sports: Rugby and Bobsleigh. He achieved that national selection in Bobsleigh, winning the junior German championships in 2019 and competing at the junior European and World championships all while working full time at IABG. He managed to achieve this incredible athletic performance without compromising his performance at work, through excellent time management and an unparalleled discipline and drive to follow through and reach his goals.

Frederick has demonstrated remarkable honesty and integrity. Frederick will be the first to point out and admit his own mistakes in an effort to correct these mistakes, improve his quality of work and learn from said mistakes. Additionally, he seeks out feedback and criticism to assess his own performance in order to learn and improve. Therefore, he is not only trustworthy but also someone who is not afraid to accept new challenges in previously uncharted territory with a steep learning curve where mistakes will be made.

I believe that Frederick is an asset to any high performing, fast paced, goal oriented team and his high quality work as well as his friendly good natured wit will be missed.

Sincerely



Dipl.-Ing. Anton Postnikov  
Project Manager Naval Missiles

IABG mbH  
Maritime  
Einsteinstrasse 20  
85521 Ottobrunn  
Germany

Phone: +49 89 6088 3669  
Mobile: +49 1511 5695825  
E-Mail: Postnikov@iabg.de

February 20, 2018

Re: Frederick Luthcke

To whom it may concern,

As an undergraduate student at Embry-Riddle Aeronautical University's Bachelor of Science in Aerospace Engineering (BSAE) program from 2012 to 2016, I first met Frederick in my AE413, Aircraft Stability and Control class in the Summer 2015. I was impressed by his level of academic work inside and outside of the classroom. His individual work including homework and exams, as well as his group project, was of exceptional quality. He clearly demonstrated the ability to quickly grasp engineering concepts and apply them in a team environment to solve a problems.

Frederick made this even clearer when he took my AE432, Aircraft Dynamics and Control class, another rigorous classes in the BSAE program. He again, showed a clear understanding of the dynamics of an aircraft and application of feedback control law to control/improve these dynamics. In this class students are introduced to Matlab's Simulink program for the first time for which most initially student's struggle with. Frederick, however, seemed very comfortable in the Simulink environment, which is reflected in his block diagram organization and the quality of his control laws.

He showed interest in learning more and appeared to be enthusiastic to new challenges, which is why I pointed him in the direction to work at our Eagle Flight Research Center (EFRC). Frederick applied and was given the opportunity to work at EFRC as a research engineer for which he was involved in numerous projects requiring team interaction. He ended up working for the Heurobotics team, which is creating a mid-size UAV with fixed twin rotors. He worked there successfully under Dr. Richard (Pat) Anderson for most of his graduate MSAE level career.

Recently, it was brought to my attention that Frederick is an athlete with an impressive record; playing Rugby for the German national team, running track for the University and now bobsledding. It is always impressive to see the time management skills balancing their athletics and academic responsibilities. Frederick did so without much difficulty while maintaining a very high CGPA.

Along a personal note, I find Frederick an honest, hardworking individual. He is concessions with producing quality work. Frederick mention the project that he may be pursuing and sounds very interesting for which I am confident that he has the capability of producing a very high quality simulation.

Sincerely



Prof. Glenn P. Greiner  
BSAE Program Coordinator



600 S. Clyde Morris Blvd.  
Daytona Beach, FL 32114-3900  
800-862-2416

**Wolfgang Unsöld**  
Strength Coach



Wolfgang Unsöld - Reinsburgstr.82 - 70178 Stuttgart

To whom it may concern,

I have worked with Frederick Lüthcke from the Training & Nutrition side since the fall of 2010 and have observed his progress as an athlete and student since then closely. From a 16 year old guy with plenty of dopamine who told me during the initial assessment that he primarily has academic goals just doing the sports for "fun" to one of most incredible athletic transformations in the history of the YPSI - he didn't go fat to fit rather than from looking like 12 years old to 20 year old jacked athlete in just 6 months and winning second place the 2012 European Rugby Championships - to now finishing off his engineering degree at a US University pursuing a career building planes while getting stronger and pushing a bobsled in his spare time.

In the last 10 years I have worked with elite athletes from over 20 sports, including 13 athletes that competed at the Olympic Winter Games 2014 in Sochi, Russia and 3 athletes at the Olympic Summer Games 2016 in Rio de Janeiro, Brasil.

And Frederick is definitely one of those that stood out of this elite group. Over time he not only developed into a high performing athlete, he also maintained great academic performance as well. He successfully structured his days so he could consistently train twice a day while attending his classes and then do homework in the evening. In fact, this is a feat very few athletes master and Frederick's academic and athletic results speak for themselves.

His driving factor is his desire to create and master challenges that push him to perform better; at anything in life. This can be seen from his progression from a regular German school, to an international School, to getting a Bachelor's Degree in a foreign country and finally to getting a Master's Degree in a foreign country. Similarly the progression from regional championships in track and field to European Championships in Rugby and in the future to the Olympics in Bobsledding. After successfully mastering one task he picked the next big goal and focused on achieving that goal until that was reached. Over time his goals grow bigger and more challenging and therefore he performs better and better.

Progression is Frederick's key to success and he applies it very well in both his academic and athletic career. Moreover his time management is excellent as he organizes his week in structured time blocks that he keeps religiously. Without his time management he would not be able to pursue both academic and athletic goals at a high level.

I strongly believe Frederick Luethcke is an excellent asset to any company that plans for the future and works well with high performing driven people.

A handwritten signature in blue ink, appearing to read "W. Unsöld", with a long horizontal flourish extending to the right.

Wolfgang Unsöld  
Stuttgart, January 2018

To Whom It May Concern:

I am pleased to write this Letter of recommendation on behalf of **Mr. Frederick Luthcke**. I have had the opportunity of lecturing him in one of my graduate classes: AE623 Atmospheric Guidance, Navigation and Control during Fall of 2017.

During this course, **Mr. Luthcke** was always on time and very attentive, answering questions and more importantly asking questions whenever he did not understand. Because of this he quickly learned the concepts taught in class and applied them very well in the assigned homework. Both individual and group homework that he was a part of showed a high standard of engineering work, which shows that he can perform well both individually and in a team.

I was very impressed by **Mr. Luthcke**'s team and their final project. They successfully estimated the attitude of a robotic arm using sensor data from an iPhone and a Kalman Filter they set up. The team created a number of different estimation approaches, with varying degrees of accuracy. The different Kalman Filter approaches performed best, whereas the quaternion based Kalman Filter showed very good results.

**Mr. Luthcke** worked well within the team and they managed their time well to complete their objectives fully before the deadline. I was also pleased with how **Mr. Luthcke** and the team treated the robotic arm equipment. The equipment was returned with no damages and the team reacted quickly to any changes in use as necessary. It shows that **Mr. Luthcke** can use expensive and delicate equipment responsibly.

I believe **Mr. Luthcke** is a great addition to any engineering team, especially in the field of dynamics and control.

If you have any question about this letter of recommendation, please do not hesitate to contact me.

Sincerely,



Hever Y. Moncayo, Ph. D.



To whom it may concern,

I have worked with Frederick Luthcke at Heurobotics from April 2016 until March 2017. Frederick Luthcke was a good worker who was always punctual, organized and produced a high quality of work.

During his time at Herobotics, Fredrick Luthcke was assgined to process telemetry data feed from one of our UAVs using LabView. He was able to log and present the processed telemetry data visually in the ground station. He also assisted other team members in their tasks. These tasks ranged from writing documentation for completed tasks to designing and executing experimental procedures for data verification. Frederick Luthcke was excellent at managing his assigned tasks and time at work. This made him an excellent addition to our team.

Frederick Luthcke successfully implemented his telemetry data feed and completed all other tasks with a very high engineering standard. While telemetry and data communication was not part of his academic course at Embry Riddle, he worked diligently to understand the system he was working with and how to make his task work within that system. In fact, he did so well that Graduate Students from the Electrical Engineering department at Embry Riddle wrote and presented a paper titled *Development of a Ground Station Software for a Vertical Take-Off/Landing Unmanned Aerial Vehicle*. This paper was presented successfully at the 2017 Digital Avionics Systems Conference.

Frederick Luthcke has been a team player and has produced quality engineering work during his time at Heurobotics. I am confident that he will be a great asset to any engineering organization.



Vinod P. Gehlot

Ph.D. Candidate and Graduate Research Assistant  
Center for Autonomous and Evolving Systems  
University of Tennessee Space Institute (UTSI)  
411 BH Goethert Pkwy, 1  
Tullahoma, TN 37388  
e-mail : vgehlot@utsi.edu