C/o Benjamin Grauer
Austrasse 5
8045 Zurich
Switzerland

8th June 2007

RE   12 Week Internship

To Whom It May Concern,

This is to certify that Benjamin Grauer completed a high-tech internship position within the Research and Development group at The Sports Production Company Ltd (SPC) from March - June 2007.
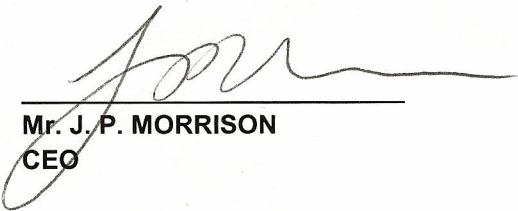
Benjamin undertook the primary task of helping SPC identify and implement software architecture suitable for registering user and activity information for a self-directed coaching and analysis system designed for golf training and entertainment facilities. This task required designing and developing a system able to register users within a golf training facility, collect activity information of all systems within a golf facility and aggregate all information into a global database system.

Benjamin designed and created the databases in MySQL and wrote several applications for registering user and activity information, exchanging data between the system and the local facility, and updating the global database. The applications were written in C#, .NET, and the Windows Presentation Foundation.

Highly developed skills and his knowledge in programming, networks and software engineering ensured Benjamin was able to deliver the various components of this new system well within project timelines. He demonstrated the ability to multi-task to an exceptional standard and his contributions constitute a crucial part of the final product.

Benjamin is a disciplined thinker who possesses considerable initiative and motivation. He worked well under pressure and consistently showed the ability to see a project through to realisation. Based on these qualities, we would welcome Benjamin as a full-time co-worker on completion of his studies in Electrical Engineering and Computer Science.

Please do not hesitate to contact me if you require further information.

Mr. J. P. MORRISON
CEO

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BRIGHAM HEALTH

BRIGHAM AND WOMEN'S HOSPITAL

HARVARD MEDICAL SCHOOL

Ron Kikinis, M.D.

Vice-Chair for Biomedical Informatics Research;
Founding Director, Surgical Planning Laboratory,
Department of Radiology, Brigham and Women's
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May 29, 2020

To Whom It May Concern:

It is my sincere pleasure to provide a recommendation for Benjamin Grauer (DOB: April 9, 1980). Benjamin is a motivated, skilled, and hardworking scholar who will surely provide unique, valuable expertise to any team.

I am the B. Leonard Holman Professor of Radiology at Harvard Medical School, as well as the Vice-Chair for Biomedical Informatics Research and founding Director of the Surgical Planning Laboratory (SPL), in the Department of Radiology, Brigham and Women's Hospital, Boston, MA. The core mission of the SPL is the extraction of medically relevant information from diagnostic imaging data and to introduce concepts of computation and image analysis to new fields of biomedical research. The lab collaborates with groups within Brigham and Women's Hospital, with other researchers at Harvard Medical School, with local universities such as Harvard and MIT, and with clinicians, researchers, and engineers throughout the world.

Benjamin joined the SPL to complete his Master's thesis, on a project titled, "*GPGPU Accelerated Volume Renderer for Guiding Transthoracic Echocardiography Surgeries (Real-time volume rendering algorithm using CUDA)*," from November 2007 – May 2008. In this project, Benjamin was able to integrate network streamed content into VTK and present it with a novel GPU based volume rendering algorithm based on ray-casting. He was a quick-thinking, a fast learner, and quickly achieved reached results. He worked together with a team of researchers to integrate their rendering technologies into new tools and aided other students in achieving their goals.

Benjamin's determination, passion for programming, collaborative nature, and scientific rigor rendered him a valuable member of our team. I have every confidence that these qualities will lead to his success in future endeavors.

If you have any questions, please do not hesitate to contact my office.

Sincerely,

Ron Kikinis, M.D.

Reference Letter

Schlieren, June 3, 2020

To whom it may concern:

With great pleasure, I hereby give a letter of reference for Mr. Benjamin Grauer, for the time he has worked with me at VirtaMed AG. Benjamin Grauer has been employed at VirtaMed AG in Schlieren, Switzerland since August 1st, 2008.

VirtaMed develops state-of-the-art surgical training tools of the highest possible realism to improve the quality of patient care. The Swiss company offers virtual reality simulators for various endoscopic operations in orthopedics, gynecology, urology, and laparoscopy. Teaching institutions and medical device companies use VirtaMed's simulators globally for education and hands-on training.

Over the last 11 years at VirtaMed, Benjamin has taken over a multitude of tasks and roles, and he has been a key person in helping the company grow from just a few employees to over 100 to date. His duties and responsibilities have included the following:

- 2008-2011: Software Engineer
  Performing all kinds of boot-strapping tasks required to get a successful business running. This included tasks such as the following
  - Porting our first simulation engine – at that time, an overly complex Linux application - to Windows
  - Implementing the simulator's User Interface in WPF and C#
  - Integration of hardware (like haptic devices) in the software, in C++
  - Various framework and architectural implementations in C++
  - A little bit of 3D modeling in Maya and Blender
  - 3D rendering to make the simulations look as good as possible
  - Gameplay implementations to make our simulators a great teaching tool
  - Deployment tasks, e.g. building SW installers
  - Finally, Benjamin had a key role in the design of the next, much more versatile, engine generation, that we started to build up starting around 2010
- 2011-2017: Engineering Manager
  During these years, the company grew significantly. Specifically, for the SW Development Team this meant going from about 5 developers to almost 40. In this time, Benjamin contributed significantly to the following areas:
  - Introduction of Scrum into our development processes. This started with him and me obtaining the Certified Scrum Master certificate, and then acting as Scrum Master and/or PO in different projects.
  - One prominent example was our ArthroS simulator module for arthroscopic procedures on the knee, where Benjamin's work as PO also included regular meetings and interactions with doctors, for example by visiting the operating room to understand better the needs and requirements of our simulators.

- Installation, introduction, and maintenance of software tools to support the Scrum process, like JIRA and Confluence and Bitbucket.
- Building up an IT infrastructure to a) support continuous integration and test automation, including tools like Jenkins, and b) support the whole company's server, e-mail, network, etc.
- Benjamin and I successfully recruited gameplay and framework developers, DevOps engineers, and the first dedicated testers. He acted then for several years as Line Manager and team lead / PO of sometimes more than 10 these people at the same time, conducting regular employee talks and salary discussions, and unfortunately sometimes also the separation process.
- Besides all the above, he still found the time to do some hands-on development himself, either directly on our engines and products, or by developing software tools that improved our development efficiency significantly.

- 2017-2020: Head of Data Services

  With an install-base of almost 1000 simulators world-wide, it became more and more important to harvest and use the vast amounts of data produced every day, ranging from improved remote upgrading, installations and support, to online tracking of user performance, and longer-term initiatives applying machine learning techniques on the collected data to provide better future surgical training. This was a very new area for VirtaMed, and Benjamin took the lead of this initiative together with one of our co-CEOs, doing very different types of work, such as:

  - Finding an external development partner, as this was not our core strength at the time.
  - Leading a team as PO of 6 FTEs, based in Poland.
  - Design of the cloud-based architecture of our VirtaMed Connect system, including the interfaces to our other software modules (UI, Engines).
  - Dealing with legal issues related to data protection, such as GDPR.
  - As the Connect project touches almost all parts of our company, Benjamin was interacting with people from UI, Engine, Gameplay development, Testers, DevOps, as well as Support and Sales and Marketing.

Benjamin is eager to and remarkably successful in acquiring new skills. He is highly productive and can get impressive amounts of work done in a short time. I have not met many others, who have the same ability to find simple solutions on presumably difficult problems, by not being afraid to think outside of the box, and by just doing and trying out, rather than talking. Moreover, he thinks and acts in a highly team-oriented way. His approach to finding quality solutions is both effective and inspiring, why the team quickly adopts his proposed solving strategies. He can be highly motivating and inspiring to other people, by leading by doing and setting good examples. Finally, he works very well under pressure and thrived in a fast-paced and dynamic environment such as VirtaMed.

Benjamin is a proactive, motivated, creative, and solution-oriented employee. He often offers suggestions for improvements and decisively voices his opinion if circumstances require him to do so. He is of supportive character, cooperative, and an open-minded team-player. His knowledge and interests in a vast number of areas, combined with his social nature and joy in interacting with others, give him the unique possibility to work at interface roles, together with people with different characters and skillsets. His behavior towards clients, superiors, and other employees has always been friendly and appropriate.

Benjamin's work performance always met and often exceeded our expectations. Finally, he is open to feedback and criticism, and he can self-reflect and develop himself, both professionally and personally.

I thank him for his really great work in our team over the years, and I wish him all the best on his future personal and professional journey.

Yours faithfully,

Denis Steinemann, Ph.D.

Senior Research Engineer VirtaMed (2019 – today)

Chief Technology Officer VirtaMed (2015-2019)

Chief Scientific Officer VirtaMed (2008-2015)

Recommendation Letter

To whom it may concern:

Benjamin Grauer, born April 09, 1980, was employed at VirtaMed AG in Schlieren, Switzerland from 2008 to 2020. From 2017 to 2020 Benjamin Grauer reported directly to me, Raimundo Sierra, Co-CEO, as we embarked together on the journey to develop our cloud-based solution for our simulator fleet; this recommendation letter reflects my experience in working directly with Benjamin.

VirtaMed develops state-of-the-art surgical training tools of the highest possible realism to improve the quality of patient care. The Swiss company offers virtual reality simulators for various endoscopic operations in orthopedics, gynecology, and urology. Teaching institutions and medical device companies use VirtaMed's simulators globally for education and hands-on training.

When we discussed the idea of a cloud-based solution, Benjamin raised to the challenge and expressed his keen interest to be part of this development effort. I had set the expectation that we would develop this project with a nearshoring team to reduce costs. Benjamin thus started with the task to explore where we could find such a team, analyzing options from Spain to Ukraine. With his rigorous analysis on the technical capabilities we narrowed our choices to Ukraine and Poland. Traveling together to these countries was a great pleasure – Benjamin is a very social person who enjoys combining work and personal interactions. He is always keen to build a personal relation to all people he works with.

Upon his recommendation we decided for a partner in Poland that would allow us to focus on the work while they would take care of the HR aspects of the team. Benjamin *was the bridge* between the team in Poland and Switzerland from day one. His wide understanding of technologies as well as agile management approaches rendered him an ideal leader for this effort. He quickly was appreciated and very well accepted by the team in Poland; also, because true to his nature he took a personal interest in each individual of the team. Within a few months the team could deliver the first proof of concept.

As the development of the front- and backend advanced we started the roll-out into the field. Benjamin experienced the challenge of "change management" that comes with the introduction of a new platform. He presented the "Connect" platform to the team, drove the definition of the end-user agreements in accordance to GDPR and ensured that the product met the legal requirements. All the time ensuring that costs were within the provided budgets.

There were various setbacks during the development, e.g., team members in Poland that decided to leave the company or internal hesitations to use the system with customers. Benjamin was always fully committed to Connect and available to help, e.g., when the VirtaMed team had a problem at a conference with Connect and required help.

To summarize; in his role as **"Head of Data Services"** he was responsible to build up and roll out a global system to Connect all of VirtaMed's simulators in order to improve the way people train and teach with VirtaMed's simulators and to provide VirtaMed with important user-based data to improve its offering in the future. His main tasks included the following:

- Gather requirements from Training & Education, Sales, Product Owners and Customers in order to build a centralized system connecting all simulators online.
- Define, drive, and adjust the product road maps incl. milestones, business plan and budget forecast.
- Manage a remote development team, their tasks and schedule priorities incl. controlling the quality of their output and achievement of pre-defined milestones.
- Integrate the development into the product lifecycle of the simulators and ensuring successful roll-out via existing operations entities such as Production and Service & Support.
- Liaise with Sales and Marketing & Analytics team to market and sell the offering to existing and new customers.
- Ensure the development was on budget.

Benjamin has a very strong talent to immerse himself into different software technologies and identifies possibilities and challenges of the software. He is a person who cares about the individuals he works with and seeks a fair and upfront dealing with people. He is very committed to the work he does. Benjamin's strength is in starting new product ideas and winning people to contribute to it. I thank Benjamin for delivering "Connect" to VirtaMed and wish him success for his future!

Yours faithfully,

VirtaMed AG

Raimundo Sierra, PhD
Co-CEO