STUDENT PLACEMENTS

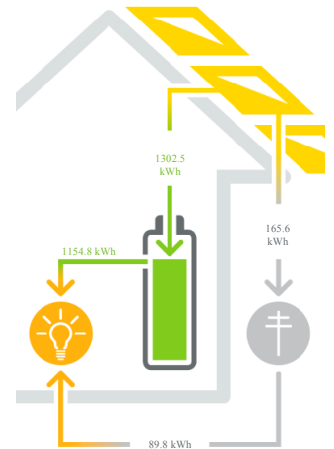## in Munich, Germany

caterva

WHO WE ARE

Caterva is a high-tech start-up company in the field of distributed energy storage, and is pioneering a new model of grid stabilization. It is well-funded and is managed by experts in the field who have previous success in renewable energy start-ups.

WHAT WE OFFER

We are offering four 13 month placements at our headquarters in Munich, from July 2017. We are looking for students with a can-do attitude and who relish a challenge. Initiative and independent working will be key. In return we offer **highly competitive salaries** and the best working conditions. To find out more about the placements, please go to **https://goo.gl/HzP1kJ**.

1302.5 kWh

165.6 kWh

1154.8 kWh

89.8 kWh

CHOOSE YOUR PLACEMENT

Power Electronics

To improve the performance and **efficiency** of energy storage systems, Caterva is developing novel concepts for combining **power converters** with **batteries** at home. The goal is always to improve the efficiency of the system. Your duties will include:
•Assemble and conduct tests on energy storage system prototypes
•Evaluate electronic components (converters, filters, resistors)
•Analyse device faults and propose countermeasures for serial production
•Improve Caterva's electronics laboratory setup

Control Center Software

Develop **High Availability** Software (HAS) for Caterva's **distributed** storage system. This system will continuously grow during the placement. The Control Center Software must operate on a 24/7 basis, therefore the solution has to be **redundant** and available even if one of the data-centers fails. Your duties will include:
•Clarify interface details for the new components
•Add new C++ classes to the existing Control Center software basis
•Add Javascript based servers to the Control Center
•Implement Linux bash scripts
•Improve HAS functionality
•Establish secure and robust connections using standard components (IPsec and openVPN)

Data Acquisition, Analysis & Visualisation

Caterva is developing an automatic **trading system** for the European electricity markets. One of your tasks will be to take **market data** and look for trends using **statistical methods**. Furthermore you will build and maintain a tool that helps us **visualise** the constant evolution of the markets that Caterva participates in. Your duties will include:
•Design the data acquisition services
•Develop and maintain a data visualisation and analysis system
•Model the archive databases
•Implement and test the data handling subsystem
•Apply statistical analysis to find market trends

Web and Mobile

Due to the **highly technical** nature of the **data** gathered in the system, Caterva is always facing the challenge of **presenting** this information to the customers. This placement will allow you to tackle this challenge by working with both the **front-end** and **back-end** of our App (iOS & Android). You will also be involved in developing **business processes** for our CRM System to better support the growing needs of Caterva. Your duties will include:
•Evaluate alternatives for data presentation on mobile devices
•Design and implement effective business processes in CRM System
•Implement the interface to the server-side data
•Develop new tools as necessities arise

HOW TO APPLY

Please send your CV with cover letter cover giving details of why you are applying for this job to intern@Caterva.de. The deadline for applications is the **16th March 2017.** Please note that whilst these positions are open to nationals of the EU and EEA countries, non-EU applications from exceptional candidates may be considered.

13 MONTH PLACEMENTS FOR STUDENTS IN COMPUTER SCIENCE (CS), COMPUTER ENGINEERING (CE) or ELECTRICAL ENGINEERING (EE)

These placements start July 2017 and end August 2018

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Their headquarters are in Pullach, a 15 minute commute from central Munich. Start-up companies are dynamic and exciting, so Caterva are looking for smart people, who relish a challenge and have a can-do attitude. If you have ambitions to run your own business in the future, this may be THE placement for you!
More information on Caterva can be found at www.caterva.de

UK Students: please note that the UK departure from the EU ("Brexit") has not changed the rules, and they will not change until 2019 at the earliest. So, please grasp these opportunities and apply!

INTERNSHIPS

Successful candidates will work in the development lab of Caterva or in the software team.

Caterva has a fast cycle develop, test and deployment process, that will give the successful candidates unbeatable professional experience for their future. Also, interns will have freedom on deciding how their development is implemented, giving meaningful responsibility throughout the cycle. Most importantly, the interns will be able to see how their work performs and adds value to the company.

There will be also regular involvement with marketing, sales, and manufacturing - offering a good opportunity to gain experience in all areas of the business. These year-long placements will allow the candidates to become fully familiar with Caterva technology and have a real chance to contribute to the development of the organization and the technologies used. As the company grows, it is likely that some of the Interns will return as employees after their graduation.

To find out more about the placements, please go to **https://goo.gl/HzP1kJ**

Placements available

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Skills required

Technical Knowledge
- Understanding of energy technologies such as batteries, power converters, and the issues surrounding stabilization of the mains power grid
- Experience of the control software used for the storage systems and control of the network
- Understanding of secure communications, especially in the energy context
- Knowledge and hands-on experience of product development.

Full mentoring will be provided at Caterva.

Work Skills
Working efficiently and effectively, being responsive, understanding organizations and teamwork. A complete working experience in a leading engineering startup that enables you to grow as a professional engineer.

Communication Skills
The communications skills needed to work in a dynamic company: face-to-face, telephone, web meeting, and e-mail. Highly proficient use of English, particularly for technical subjects, enabling effective and clear communication.

Marketing
Understanding the growing market for Caterva technologies, and gaining a genuine appreciation of the market trends from an insider's point of view.

Relationships
Working in a multi-cultural environment. Regular interaction with management.

Recruitment
A unique element in these placements is that the Interns will be involved in the recruitment process for their successors and running the initial selection process. They will then give training to their successors during a handover period (hence a 12 month placement plus one month handover).

Other skills we value, but which are not essential:
- Additional language skills (apart from English). German is useful socially
- Previous work experience
- An appreciation of different cultures

Specific skills desirable (by position)

Power Electronics
- Both practical and theoretical problem-solving abilities
- Passion for and understanding of power electronics
- Confidence with electric measurement instruments (oscilloscope, power meter)
- Experience with IGBT-based power converters (10-30kW range) and transformers is useful
- Experience with batteries and BMS useful
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Control Centre Software
- Confidence with Linux platforms
- Experience with C++ programming
- Experience with Java programming
- Application level knowledge of openVPN and SSH
- Experience with bash shell scripting
- Knowledge of JavaScript server programming (nodejs) is useful

Data Acquisition, Analysis & Visualisation
- Good knowledge of object oriented programming, preferably Java
- Confident working with databases
- Understanding of basic web technologies and communication protocols
- Experience with Linux shell environments
- Familiarity with data mining and big data technologies is useful
- Knowledge of statistics and analytic methods is useful

Web and Mobile
- Experience of web design or mobile development
- Experience with HTML5, CSS and JavaScript
- Good knowledge of Java is very useful
- Experience managing productive environments (web servers)
- Confident working with databases

Working Conditions & Remuneration

- Location – Munich, Germany. An international city friendly to students from all over Europe! Excellent public transport, buzzing nightlife, outstanding sports activities – in short "a cool destination"
- Collegiate company environment: everyone working together on common goals
- State-of-the-art development Labs with excellent tools and equipment
- Training: excellent on-the-job training
- Salary: €1600 to €1,750 Euros pre-tax per month, depending on experience
- Salary paid monthly - so you must be able to support yourself during your first month.
- Paid holiday allowance of 25 days per year plus the German/Bavarian public holidays.
- €450 relocation allowance payable in your final month at Caterva to assist with relocation costs back to your University.

Individual Requirements

Applicants MUST meet the following criteria
- Be available for a placement of at least 13 months

- Able to retain their student status throughout the placement because the placement is a required or optional part of their course (not a "Student in suspense"). Your University is required to sign an Internship Contract with Caterva.
- Be fluent in English, written and spoken
- The drive and motivation to accept new challenges

Nationality
- Most of these positions will be filled by citizens of the European Union or Switzerland
- Non-EU applications from exceptional candidates may be considered

General skills you should have
- The ability to learn quickly
- A keen sense of responsibility
- The maturity to work with minimal supervision
- The ability to live independently away from home

Applications

Applications will be assessed as they are received, so applying early increases your chances.
- The latest submission date is 16th March 2017

APPLICATIONS:
1. Send your CV and a cover letter in English by email to **intern@caterva.de** - The cover letter should detail why you are applying for this job, and how you satisfy the criteria required. It should not be more than one side of A4. Please ensure that you specify your nationality in either the cover letter or the CV.
2. CVs will be assessed shortly after they have been received and selected candidates will be offered a telephone interview.
3. **Prior to attending the first interview, candidates will be asked to provide a copy of their passport or ID card and confirmation in writing by the University of the Student Status**. Candidates will be taken further in the process only once this information has been received.
4. The first interviews will look at your technical skills
5. If your skills match Cateva's needs, a second interview will be offered to review your career plan and your motivation for applying. ALL the interviewers in these first two stages have previous experience of completing successful Internships in Munich.
6. At least half of the successful candidates from this process will also be interviewed by Robert Owen who is supervising this process.
7. Candidates that pass these stages will then be shortlisted for interviews by Caterva which could involve current students and technical supervisors.
8. Suitable candidates will be offered positions quickly to ensure that no candidates are lost through waiting. We expect the process to be fully completed and all offers made by the end of April.
9. Successful candidates will start at Caterva in July – date to be mutually agreed.

For more information:
Essaimage Associates (www.essaimage.com) are running this recruitment process for Caterva. They have 22 years' experience running 13 month placements across Texas Instruments Europe, EnOcean GmbH, and Imagination Technologies.
You can address your questions to Robert Owen, Director: e-mail: rcwo@compuserve.com