

Transferring AI into innovation Bachelor Seminar (7 ECTS) in the Winter Term 2024/25

Topic

Innovation is crucial for companies to generate growth and welfare. Four decades ago, companies primarily generated a significant portion of their knowledge in-house, developing innovations from this self produced knowledge. Nowadays, firms increasingly rely on basic knowledge produced by universities. In addition to academic scientific discoveries, companies further diversify their knowledge acquisition process by increasingly relying on research conducted by other external sources of knowledge, such as startups. Besides the institutional origin shift, the geographical origin of knowledge has also shifted from a national to a more international transfer landscape over the past 30 years. Due to this decentralization of knowledge production, the effectiveness of knowledge transfer has gained significant importance. Despite research having acknowledged both of these shifts, it has so far paid insufficient attention to transfer mechanisms that determine the speed and the effectiveness of science travelling into companies.

In this seminar, you will receive a small AI dataset with which it is possible to trace where academic knowledge is produced and how it is converted into innovation through patents by industry. For instance, the data shows that while German universities produces a substantial amount of basic scientific knowledge in the AI field, only a small portion of this basic scientific knowledge eventually finds its way into patents by German inventors. A large part of the scientific knowledge is either not patented at all or is utilized by inventors from other countries. With the datasets, questions such as the following can be answered: How can researchers publicize their research to increase the likelihood that it is transferred into innovation? Which factors affect the speed of knowledge transfer from academia into industry? Which geographical differences exist within countries like Germany or Great Britain? Which political policies could enhance the transfer of domestic knowledge? You will have the opportunity to select a topic focused on university-industry knowledge transfer.

No previous knowledge of programming is required for the data work in the seminar!

Objectives:

Apart from providing a broad overview of the literature and current research topics, the seminar aims at enhancing participants' scientific writing, analysis and presentation skills. Therefore, each student has to submit a seminar paper (roughly 12 pages), prepare a scientific presentation and a peer review presentation. Moreover, we encourage active participation in the discussions. Thus, students will be prepared for conducting their own research in the scope of their final theses. Participation in the seminar will increase the chance of being accepted for a final thesis at the chair.

Course Assessment:

Participants are expected to read and work with the literature related to their topic, analyse the given data and write a paper following the standards of academic writing. In addition, each participant has to present his or her topic (15 minutes) and critically review the work of a fellow student in a short 5 minutes presentation. The paper and presentations can be in English or German. For the seminar paper, the chair's guidelines apply and will be discussed at the beginning of the course. The following contributions will be evaluated for the final grade:

- Scientific seminar paper (12 pages)
- Presentation (15 min)
- Short peer review presentation (5 min)
- Active participation in the discussion

Application Procedure:

Students can apply for the seminar from **17.6.2024 9:00 am to 24.06.2024 until 11:59 pm**.

E-Mail your **application as 1 PDF file** (including your CV, grade overview from your Bachelor, short text on why you are interested in the seminar – no longer than half a page) to:

alexander.peter@uni-passau.de

Your application and all documents can be in English or German.

Preliminary schedule for the seminar:

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| Kick-off Meeting and Introduction to Scientific Writing <i>22.10.2024</i> | Introduction to the seminar Presentation of research questions / topics Participants' indications for topic preferences Introduction to scientific research and writing |
| Assignment of Topics <i>Shortly after kick-off meeting</i> | Participants will receive an email with their seminar topic based on the indicated preferences |
| Guidance Meeting 1 | Discussion of participants' abstracts and tables of content (15 min / participant) |
| Guidance Meeting 2 | Discussion of progress (15 min / participant) |
| Guidance Meeting 3 (voluntary) | Discussion of progress (15 min / participant) |
| Introduction to Scientific Presentation | Introduction to presenting scientific papers |
| Submission of Seminar Papers <i>One week before the final presentations</i> | Hand in seminar papers |
| Final Presentations <i>2-3 weeks before the end of the term</i> | Presentations of seminar papers and peer presentations |