Main Seminar
Hot Topics in Bioinformatics

Alexandros Stamatakis
Preliminaries

- Seminar talks: 35 minutes + 10 minutes questions
- English or German
  - If you give the talk in English, I will judge language quality mildly
- **Reports**: 8 pages in English or German
  - If you write the report in English, I will judge language quality mildly
  - Use LaTeX template (Springer LNCS) indicated on course web-page
- **Criteria**: Structure, Clarity, Precision of presentation
  → Use figures and drawings
  → Writing & Presentation skills very important if you consider a scientific career
  → check general writing tips and links on the course web page
- **Grade**: ½ talk + ½ report
- **Grades**: In the seminar my grading is very strict regarding language and presentation quality in the report & the presentation
Preliminaries II

• Don't underestimate the seminar 3 ECTS = 90 hours per semester

• No plagiarism
  → I am likely to notice!
  → I have caught someone almost every year thus far!

• Start working on the seminar on time!

• Know the background of the paper, that is, any algorithms/theories cited therein!
Topic Assignments

- To be determined
Deadlines

- Topic selection: **May 8 → via email**
- Supervisor assignment by Alexis via email after all topics are set
- Meet with supervisor **at least twice** before your presentation!
- Talk slots: to be determined, but presentations will be on **June 18, June 26, July 9, July 16, July 23**
- Meet with supervisor **at least once** before handing in report
- Report Deadline: **September 28**
Presentation Slots

- June 18
- June 25
- July 9
- July 16
- July 23
Schedule

• Today → how to give a scientific talk and write a report (Alexis)
• Presentations: To be announced
Topic selection

- I'd like to give you as much freedom as possible
- This will allow you to choose a topic you like
- If you like a topic, you will give a better presentation and write a better report

- Topic selection
  - Pick any of the papers mentioned in the course
  - Pick any topic of the course and ask me for a paper
  - Contact one of my lab members that taught last semester (Pierre, Ben, Alexey) and ask them for a paper on their topic
Course Topics

- Sequence Analysis
  - Indexing techniques & suffix trees
  - Operations on strings
  - Sequence alignment
- Phylogenetics
  - Parsimony
  - Likelihood
  - Parallel computing in phylogenetics
  - Discrete operations on trees
  - Bayesian Inference
- Population Genetics
  - Coalescent models/method
  - Mixed phylogenetic & pop. gen. approaches
Topic Selection II

• Chose a recent paper you find interesting from the following journals
  • Bioinformatics
  • BMC Bioinformatics
  • IEEE Transactions on Comp. Biol. & Bioinformatics
  • Systematic Biology
  • Molecular Biology and Evolution
  • BMC Algorithms for Molecular Biology
  • Nucleic Acids Research
Topic Selection III

- You may also present a Bioinformatics topic that was not presented in the winter class (e.g., coalescent simulations in population genetics or protein structure prediction) in a more teaching like manner.

- Do you think that it will work like this?
Reports

• Examples of good reports and nice slides from summer 2015 and 2016 are available on the course web page

http://sco.h-its.org/exelixis/web/teaching/BioinformaticsModule.html
Supervision

- To talk to your supervisors make an appointment via email
- Don't wait until the very last minute before your presentation to make an appointment → make them straight after the topic assignment
- You will be assigned one of my lab members to help you with preparing the talk, the presentation & the report
- They can come to KIT to meet you, except if you want to visit our institute in Heidelberg one day
- Meetings with supervisors must take place
Your tasks

- Think about, search and select a topic by May 8
- Contact your supervisors (once assigned) immediately to schedule meetings! A total of at least three meetings are required!