EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Fast Dose Estimation for Radiotherapy Treatment Plans with Uncertainty Estimation

Master Thesis

supervised by

Prof. Dr. Daniela Thorwarth and Dr. Christian Baumgartner

Simon Gutwein

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Aufbau

Abstract

- Klassisches Abstract

Dedication

- Klassische Dedication

Declaration

- Klassische Declaration (schauen ob es von Tübingen eine Vorlage gibt)

Introduction

- Was ist Radiotherapy und warum ist die so interessant
- Wie läuft eine Radiotherapy ab
- Worauf kommt es bei der Radiotherapy drauf an
- Was ist der limitierende Faktor bei Monte Carlo
- Was ist Machine Learning und warum is es von Interesse

Previous Work

- Work that proposes a different method to solve the same problem.
- Work that uses the same proposed method to solve a different problem.
- A method that is similar to your method that solves a similar problem.
- A discussion of a set of related problems that covers your problem domain.

Material & Methods // Proposed Method

- Worauf baue ich auf (DeepDose)
- Baseline Experiment
- Testen gegen Baseline
- Wie erweitere ich dieses Modell:
- RevNet (Christan Baumgartner), Uncertrainty Estimation

Results

- Performance Ergebnisse des Baseline Netzwerks
- Performancewerte für unterschiedliche Entitäten
- Performance Werte mit RevNet
- Funktioniert die quantifizierung der Uncertainty mit dem Ansatz

Discussion

- Wie sind unsere Ergebnisse einzuordnen im Vergleich zu der Baseline
- Netzwerk Performance bei der unterschiedlichen Entitäten
- Welchen Impact hat das Training mit neuen Entitäten
- Welchen Impact hat das Training mit größeren Patches (s. RevNet)
- Wie funktioniert die Uncertainty Quantification
- Was sind die Limitationen

Dedication

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Declaration

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Introduction

Show why Radiotherapy is so important: search for sources of application of radiotherapy for different entities. Prostate: [1, 2, 3] Mamma: [4, 5, 6] Head & Neck: [7, 8, 9, 10] Liver: [11, 12, 13, 14, 15] Lymph Nodes: [16, 17, 18, 19, 20]

Material & Methods

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Results

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Discussion

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Conclusion

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Appendix Title

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