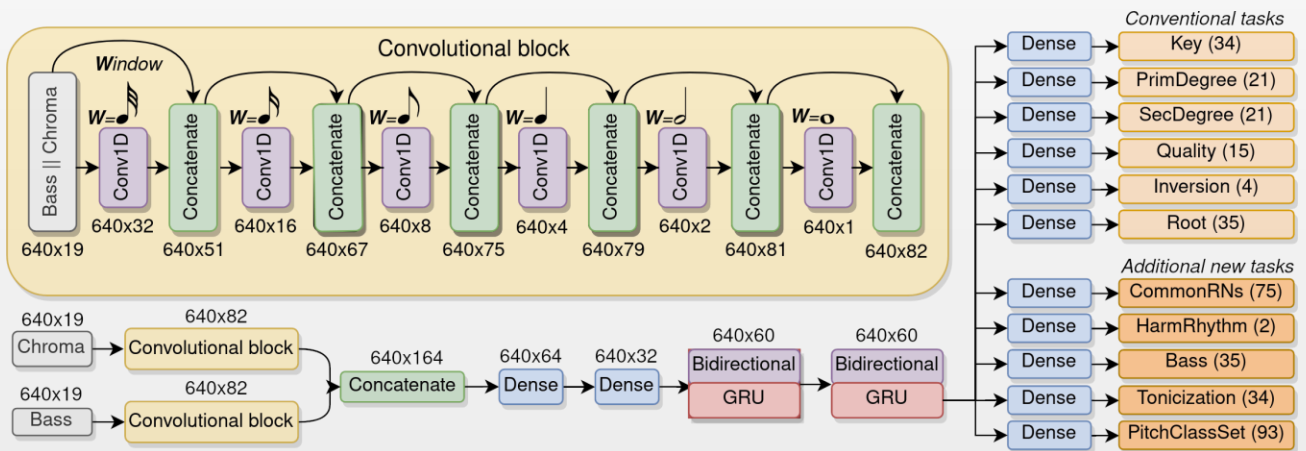


AugmentedNet: A Roman numeral analysis network with synthetic training examples and additional tonal tasks

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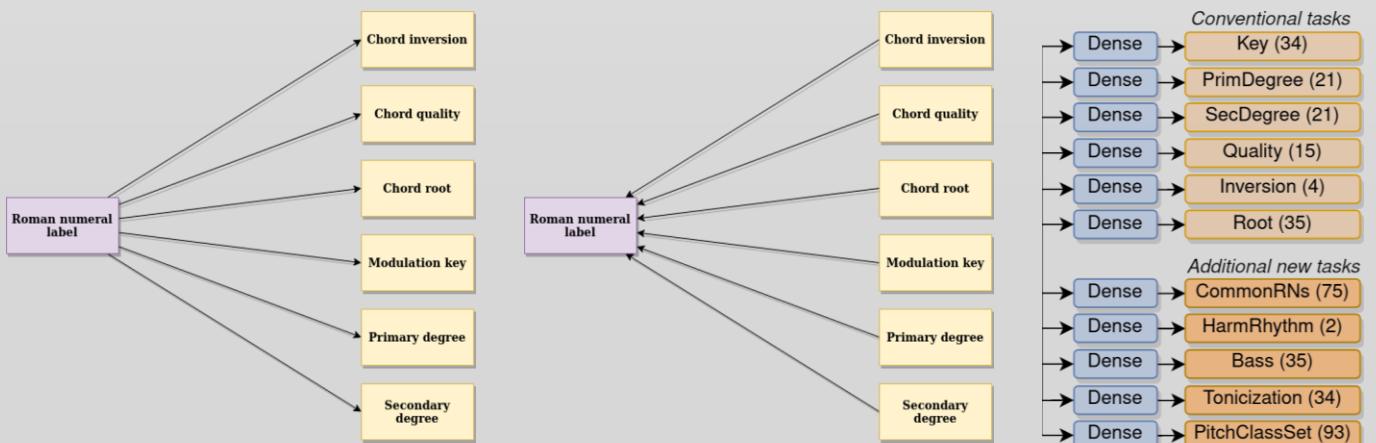
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The network: it is similar in size and design to the one by Micchi et al. (2020). It is characterized by a different layout of the **convolutional layers**, a **new representation of pitch spelling**, and a separation of the bass and chroma inputs into independent convolutional blocks

Starting with the **Roman numeral analyses** of our dataset, we **synthesized 'new' training examples**. The synthesis was done using the music21 Python library, which we used to generate scores of block chords. We artificially 'texturized' the block chords. The texturization was done by applying three note patterns: "Bass split", "Alberti bass", and "Syncopation". The patterns were designed intuitively, pursuing certain goals in the resulting texture.



Roman numeral annotations can be **unpacked** into different features. Roman numeral annotations can also be **reconstructed** from these features. We found that adding five more features (outputs) to the multitask learning layout improved the performance. We also used one of our new features (**CommonRNs**) as an alternative way of reconstructing the Roman numeral. We found that this leads to higher accuracy, compared to the "old" way.

Find out more: <https://github.com/napulen/AugmentedNet>