

# **Delaunay Triangulations on the GPU**

Patryk Drozd  
Trinity College Dublin  
drozdp@tcd.ie

## **Abstract**

An exploration of the synthesis and implementation of Delaunay triangulation algorithms for their use in heterogeneous computing.

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## 1. Motivation

## 2. Preliminary

### 2.1.

## 3. Serial Algorithms

### 3.1. Lawsons algorithm

### 3.2. Incremental Point Insertion

```
1: procedure BINARY-SEARCH( $A, n, v$ )
2:    $l \leftarrow 1$ 
3:    $r \leftarrow n$ 
4:
5:   while  $l \leq r$  do
6:      $mid \leftarrow \text{floor}(\frac{l+r}{2})$ 
7:     if  $A[mid] < v$  then
8:        $l \leftarrow mid + 1$ 
9:     else if  $A[mid] > v$  then
10:       $r \leftarrow mid - 1$ 
11:    else
12:      return  $m$ 
13:    end
14:  end
15:  return null
16: end
```